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ORIGINAL ARTICLES.

THE WORLD'S UNIVERSITY.

By EGBERT GUERNSEY, M. D.

THE great universities of the world have been intellectual centers to which the scientific thought of each successive age has gravitated by an irresistible attraction, crystallizing within their walls in the crucible of mind into active living principles bearing rich fruit in the great world of progress. These institutions, in the formation and development of different departments, mark the progress of scientific attainment in the world's history. It has been the crowning triumph of the close of the Nineteenth Century to bring together in the New World, on the shore of one of its largest lakes, in a city of a million of people, where fifty years ago there was scarce a habitation or at least but a small hamlet, a university so vast in its proportions, so complete in all its departments, so systematic in its arrangements, that it contains an epitome of the development of scientific thought and progress in every department of knowledge, from the dawn of the earth's creation till the present time. It is a university such as the world has never seen, a history of evolution from the first protoplasmic cell through succeeding grades of vegetable and animal life and through successive triumphs of mind, until beneath its touch the very elements of nature crystallize into form and use, and seem instinct with intelligent life and thought. And the story is told so clearly, moving like a panorama before the mind, that one can read in its gradual unfolding through the ages the linking of thought with thought, and culture with culture, ever rising to higher perfection. In the vast building devoted to fisheries we can trace, in the immense aquariums and in the preserved preparations, the development of marine life from its lowest to its highest organizations, while in the Forestry Building and the Horticultural Hall are shown the types of tree and plant life of all ages and of climes from the coal formation of a prehistoric age to the hardy evergreens of the Arctic regions. The delicate tracing of ferns and the soft texture and beautiful green of mosses tell of a primitive formation of plant life; and woods, precious in odor, in color and texture, of the hot sun and the rich soil of the tropics, while each degree of latitude, north and south of the tropics, as far as vegetable life extends, imprints upon its own products the peculiarity of its soil and climate. As you pass through these halls you turn one leaf

after another of plant life in every zone and in all soils, from pole to pole, and almost see the workings of nature's great laboratory, under the potent action of the sun, in vegetable life in every age of the world. Interesting as is a study of plant and tree life as a time record of earth changes under solar influences and advancing age, that of spices, fruits and cereals, utilized for human use, is still more interesting in its story of evolution under the process of intelligent culture from the lower into a higher life and more perfect nutrition. The perfection which many of the cereals and fruits have attained by longer or shorter periods of culture is simply the outlook for others, shown side by side with them in their wild state, which give coequal promise of like development.

This gradual unfolding of the world's life, mineral, vegetable and animal, gathered from every clime and from all ages of earth's history present to the sight, the touch, and the intellect a story of evolution more graphic and realistic than could ever be obtained in the laboratory of the chemist, the college lecture room, or the text books of scientists and historians. The weapons of the stone age, the bow and arrows of the savage, the iron headed lances are only the first links in the chain of human necessity, of defence and attack, each successive work more complete, until in the manufactures of Krupp and of Bethlehem engines of destruction so terrific in their power are created as to turn by their very capabilities of destruction the selfish greed and animosity of nations from the bloody field of war to the quiet walks of arbitration. Thus evil works its own cure and finds not unfrequently in itself the elements of its own destruction. The birch bark canoe of the Indian, the float of the South Sea islander, the Viking of Norway, the Caravels of Spain, lead up step by step through the ages and the progress of thought to the armor clad and turreted *Illinois* and *Victoria*, with what would seem their irresistible power and their terrible engines of destruction. But these later structures for defence and attack, in the construction of which, in their power of speed, in their coating of steel, and engines of destruction, a nation's wealth and a nation's mechanical talent have been utilized to make them irresistible in attack and impregnable in defence, become the victims of the little torpedo boat, which we see nestling quietly by their side like a child's toy, as it glides under the water, driven by electric power with unerring certainty, exploding its dynamite charge as it strikes the huge vessel, tearing through its steel clad sides and sending the ship to the bottom of the ocean. In science we see re-enacted the little smooth stone in the sling

of David, smiting the giant between the temples, and sending him headlong to destruction.

The frog's leg, quivering on the table of Galvani, was the key to the door of what has proved in the immediate past and points the way still more clearly in the future, to nature's true trail in utilizing its force in unlocking the wonders of nature, crowning man as master, and making its forces subject to his will. From the table of Galvani and the frog's leg to the swiftly gliding torpedo boat impelled by an unseen and silent power, the telegraph and the telephone with their annihilation of time and space, the dynamo as it swiftly revolves through the power of steam, developing a force so potent, so all powerful, and yet so subtle that there seems no limit to its power or no end to its application, there seems a long, long distance, and yet the interval has not, reckoned by years, been very long from the time of Galvani and his simple experiment to the present; in fact, during the past few years, one development in the power and use of electricity has trod so rapidly upon the footsteps of another, that the thought and the industries of the world have been changed as by the touch of magic. Here, side by side, in the same exhibit, is the first dynamo for the development of power, made by Brush in 1876, and the last, which generates a part of the power which moves during the day the life like machinery, the whirr and buzz of whose innumerable wheels are seen and heard on every side, and at night furnishes the 18,000,000 candle light which girdles as with a line of fire temple and colonade, flashes from domes as they seem hung in mid heavens, bringing out in bright relief the delicate lines of sculpture, painting the rainbow in the mist of fountains, and lighting up with its pure clear light canal and lagoon, with their swiftly gliding gondolas and electric barges, presenting a vision only exceeded by that seen by St. John in the Apocalypse. This subtle power, which no one has yet defined, this concentration of force which no one has or can calculate, and yet which exists everywhere to such an extent that it has been computed that in a single cubic foot of ether which fills all space, there are locked up ten thousand foot-tons of energy which may have been part of the same power which combined the elements and crystallized into form, starting on their eternal round, the suns and planets whose points of light glitter in the dome of night. It has been demonstrated that a true flame can be produced without chemical aid—a flame which yields light and heat—without the consumption of material and without any chemical process. But to do this economically requires vastly improved methods for producing frequent alternations of currents and enormous potentials. Looking at the developments of the past few years, is it a stretch of the imagination to conclude that long before the coal formation is exhausted, to which we now look for the elements of light and heat we may be able to obtain all in greater perfection by tapping the ether and drawing from it inexhaustible stores of power?

As we stand by these swiftly revolving dynamos driven by the power of steam, the bright sunlight streams in through the beautiful dome above us, and shines upon its own stored up heat and energy in its storehouse, crystallized by its power ages ago from the elements into coal, and buried beneath the earth and rocks until the progress of life and the necessity of the world required its use, as it is liberated in the furnace to set in motion the dynamos which in their rapid revolutions evolve from matter and suck from the ether the power which has entered so largely into the life of the past, the power of the present, and foretells the possibilities of the future. Here beneath this dome, in the free and stored up sunlight, with its heat and development of electric force, is a trinity, a mystery, which no mind has or can fathom, the evolution of that spirit of life working through all the cycles of eternity in its never ending change of elements, a part of that creative power with neither beginning or ending, ever flowing from and returning in its endless round through birth and death, reproduction and decay, which are simply atomic changes of elementary matter, to that center of all life of which it forms a part.

This atomic change of molecules going on wherever there is life, and which performs such important work in the development and changes in the phenomena of life, is shown, in part, in the bacteriological department, where Prof. Brieger has collected specimens and inclosed them in little vials, of the swiftest and most powerful poisons on the earth, infinitely more destructive to life than the vegetable alkaloids, all obtained from the dead bodies of those who have fallen victims to various bacteria. This class of poisons are termed toxins, toxalbumines or cadavirines, and include in their list such poisons as neurine, betains, gadanine, textanotoxine, typhotaxine, toxalbumines of cholera or typhus, and cadavirine, obtained from the normal body. These poisons are not the bacteria themselves, but ptomaines formed by the re-arrangement of the atoms of which flesh is composed, by the action of bacteria, which develop with incalculable rapidity. Through their action the atoms which form healthy flesh, are so re-arranged as to form the deadly poisons which paralyze the vital forces in cholera, in typhus and yellow fever, and in a host of other diseases. In isolating the bacteria, reproducing them by culture, and obtaining in crystallized forms the product of their work in the deadly ptomaines, the scientist has not only been able to reproduce symptom by symptom, in the living animal, all the effects of the original disease, but also to obtain valuable hints for prevention and cure. By this atomic and molecular change in decomposing tissue after, and even before death, all the vegetable alkaloids, such as morphine, strychnine and atrophine have been so perfectly simulated as to resemble them, atom for atom, and produce precisely similar effects on vital force and living tissue. These developments have of course changed materially the course of medico-legal jurisprudence, and have turned the court room, to

a certain extent, in cases of poisoning, into a chemical laboratory, upon whose developments hang the issues of life and death.

With each succeeding decade the field of investigation and established fact in every department of knowledge is so enlarged, that old words have a broader meaning, and new words are coined to meet the exigencies of the times. As we ascend the steps of the art galleries and enter the vast rotunda devoted to the master pieces of ancient and modern art, as represented by the brush of the artist and the chisel of the sculptor, a feeling involuntarily comes over us in the midst of all this beauty, strength and delicacy of conception and perfection of execution, that modern art has passed beyond the studio of the painter and the atelier of the sculptor, using them only as parts of its great conceptions and finished work, to the brain of the mathematician and the workshop of the mechanic. The word *art* is so enlarged in its meaning, that its greatest triumphs have been won in articles of use rather than in works of imagination, or copied from nature to hang upon the walls to delight the eye of the favored few. The study of strength, the precision of action, the adaptation of means to ends have seemed to imbue the very elementary substances of nature, singly and in their combinations, as their powers were understood, with thought which makes them almost human in their action, as if in each atom there was a thinking, active brain. There has been no degeneration of art, but it has so grown and expanded, ever adapting itself to the progressive spirit of the age, that it has overflowed the narrow walls of the studio and the atelier, making them adjuncts to the workshop of the mechanic, where it has transferred its sceptre. As we pass out of these vast galleries, rich with the accumulated treasures of art from almost every century of the Christian era, we find ourselves in the midst of the grandest triumph of art in all its lines of beauty and harmony ever created by man, in a mosaic of buildings, which in their grouping, their structure and their surroundings are the embodiment of the best architectural talent in the world. Never before in all the history of the world, was such a picture presented to the eye, such a triumph of architectural skill, so complete in all its details, so grand in thought, so magnificent in structure, so ennobling to the mind, that its lessons will never be forgotten, but ever remain a living picture in its influence for good. As we pass on to the buildings representing separate nations and States, we find the highest representation of art in the clear comprehensive story it tells of the history of nations and States, separate and as composite parts of great empires, their resources and their industries. Africa, Asia, Europe and America are represented from the lowest types of barbarism to the highest forms of civilization. Of the thirty-two buildings bearing the names of the States by which they were erected, extending from ocean to ocean, each one in its structure and its furnishing tells the story of its history and the sources of its wealth and power,

while in the Government building, the history of the machinery of Government from the colonial period when it occupied a narrow strip along the Atlantic coast to the present, when its mighty constellation of States, stretching across a continent, each an empire in itself, is clearly shown in the working of its army and navy, its postal service and finance, and the minute arrangements by which the nation's heart keeps in active circulation and holds in strong control the life of an empire of 65,000,000 of human beings. More can be learned in a single day of the inner life and progress of the world, more especially of this country, as shown by soil, climate, industries, resources and facilities in communication, than in thousands of miles of travel and years of patient study.

The ennobling influence of thought worked out in its ten thousand applications for mastering and utilizing the elements and forces of nature, ever progressing along harmonious lines, from step to step, to higher and still higher conceptions, is seen and felt in the harmonizing influence it exerts over the tens of thousands, who daily throng the avenues and corridors of this great university. Like one entering some vast cathedral, the spell of beauty and majesty and harmony rests upon all. There are no angry or impatient words, no selfish crowding, but an air of reverence, of close observation, and of gentle courtesy exists everywhere. The animal seems to be in a great measure eliminated, revealing man in those higher qualities of mutual respect and esteem.

The same spirit seen in the millions who have visited Jackson Park, of mutual respect, of a strong desire to give and receive information, was specially manifest in the Parliament of Religions, and scientific organizations drawn to Chicago by and forming important parts of this world's university. Sectional differences were forgotten, bitter partisanship for the time buried or softened in the all-pervading power of one mighty central principle. There was one great central fact, admitted by all; a creative, intelligent power combining the elements, infusing into them its own spirit and evolving a world teeming with life in every grade, and in every form, from the single protoplasmic cell to the highest living organization with its mechanism of thought and intelligence of action, looking forward to the evolution of the human until it becomes one in thought, and in perfect harmony with the great centre of life. How this could best be accomplished, towards which all were striving, scientific and religious organizations met on the same platform on terms of perfect equality for an interchange of thought, in which each could gather from other help in perfecting and accomplishing the great work of universal freedom and a united brotherhood and perfection of life.

Many centuries ago a Buddhist sovereign gathered together in a session, representatives of the different faiths in the far East, and the result was a grand lesson of sympathy and tolerance, which was engraved on monuments of stone. But never

before has a congress been gathered which gave such an expression of the real unity of the human race, and showed so emphatically the central fact of God and the Divine truths taught in every age of the world by His incarnations in human form, giving through each the same line of truth in such form as could be best understood. Upon the same platform, headed by Cardinal Gibbons, a Prince of the Roman Catholic Church, stood 200 priests, representatives of the Catholic and Protestant forms of Christianity, and nearly all the Oriental systems of faith.

The disciples of Zoroaster, of Brahma, of Buddha, of Confucius; and nearly all the distinctive sects of the far East, with the Jew, the Christian and the Mohammedan, stood side by side in brotherly equality, and together sung the Doxology, and repeated the Lord's Prayer. Each great organization looked back to its founder as an incarnation of God in Man, giving His message to the world in the Vedas, the Avasta, the Koran, and our own Bible, each alike sacred to his followers. The central figure in all these religions is God, pure and harmonious in all His works and teaching, showing through all His incarnations, the great principles of pure and unselfish love in their evolving power from the animal to that higher form of spiritual life, which is a part of Himself. And this is the all-absorbing, the ever-present lesson taught in this university of the world's thought in every department in which science and revealed religion blend together, each confirming the other, and both working as a unit until in the evolution of the human race it becomes a part of God's eternal laws of harmony, and in thought, in life, and work, one great brotherhood, whose father and head is God.

LIFE IN THE CELL.

By JAMES A. CARMICHAEL, M. D., NEW-YORK.

IN the antecedent words upon this subject, we ventured to give another interpretation to the well-known apothegm of Virchow, "*omnis cellula e cellula*," and proposed what seemed to be of still greater significance, the vitagenic or life-giving element of the cell, and denominated it thus, "*omnis vita e cellula*." The question naturally suggests itself, what is life? and of all questions that can be propounded to the human mind, there is not one more difficult; indeed it may in truth be said, more impossible of satisfactory solution than the nature of the mysterious vital principle that animates everything that lives its life, whatever that life may be. If there be a way by which, as it seems to us, even an approximate interpretation of the occult principle of life may be reached, it can only be by a critical knowledge of the organic nature of the agencies by which the manifestations of life are primarily generated and maintained in their several periods of existence, whether they be ephemeral and fleeting, or demand a more prolonged and

protracted incubation and varied phase of development, growth, maturity, decadence, decay and final dissolution. If we accept what now seems to be the inexorable fiat of the most advanced out-giving of scientific thought, we must lay hold on the cell as the potential factor whose mutations and evolutions determine all the phenomena which, in the aggregate, we call life. Here we take the initial step in the arduous, intricate and perhaps insurmountable task that confronts us. But we must "buckle to it." Time enough to say we can do no more, when we have "fought the good fight." "Let him that putteth on his armor, not boast as him that taketh it off." So, then, a cell, when endowed with its own "*vis insita vitæ*," its hidden and mysterious power of life, contains within itself all the vital elements that maintain its procreative force and quicken its fruition and perfection, and if we may interpret St. Paul's interpretation of the resurrection of the body by the revelations of microscopic science, as it exists to-day, the transition to an endless immortality is but the substitution of the finite operations of physical life here, for the progressive enlargement and development that will accrue to the life eternal. "But some man will say, How are the dead raised up, and with what body do they come? Thou fool, that which thou sowest is not quickened, except it die." So says the Apostle. One of the processes of cell-proliferation and cell growth, as promulgated by cellulology is, that a primordial or parent cell, as it is called, exercises its maternity at the expense of its own existence, and that in giving birth to its progeny, it sacrifices its own life and becomes subject to removal as effete and obstructive matter, only to be cast out and eliminated. If this be true, may it be cited as confirmation of the thought of the inspired Apostle, as expressed by his further declaration "It is sown in corruption, it is raised in incorruption; it is sown a natural body; it is raised a spiritual body?" But here we come again upon the threshold of things immaterial, or, if you like, spiritual. We have already protested, in the name of severe and exigent science, against the admission of immaterial agencies in the solution of the manifold mysteries of life. We have now to do with a palpable, tangible, visible physical entity, the cell—a creator of life whose wondrous operations science now enables us to subject to our visual sense and most critical ken—we say the cell begets life, but do we reflect upon what else it produces? Hear the poet and philosopher, Jean Jacques Rousseau, who, though he was in perfect ignorance of the interpretations by science of life, as it emerges from its cellular birth, and stands revealed in all its potentiality and power, yet apostrophized life thus: "To live, is not merely to breathe; it is to act, it is to make use of all our organs, functions and faculties. This alone gives us the consciousness of existence." But how immeasurably are we removed from him in his finite and imperfect knowledge of the sources from which that life springs! Suppose it had been given to him to

know and see with full intellectual apprehension and by palpable visual impression, the phenomena of cell-life and cell-growth as they passed across the field of vision spread out before him by the hand-aided and helper of science, the microscope. Perhaps it might be said that if he had known of the material agencies by which we "breathe, act, and make use of all our organs, functions and faculties," it would have dulled the sensibilities of the "fine frenzy" of his poetic temperament, and he would have preferred to remain in profound ignorance of the revelations of science, and like another of his poetical brethren, believed that "to be happy, one must ask neither the *how*, nor the *why* of life." To the thoughtful mind, to look at life thus were indeed to play the fool, and repeat with the empty rhymster

"Life is a jest, and all things show it
I thought so once, but now I know it."

To us who are looking for a "Great First Cause," how much more does his thought commend itself to our anxious inquiry who said

"Life's but a means unto an end; that end
Beginning, mean, and end to all things, God."

But to realize in God, the Great First Cause, is to inquire into and know, as far as limited human knowledge and intelligence can attain, the laws that project life into existence govern and control every moment of that existence, in its every phase and feature and go with it to the border line where time ends, and the unknown begins, the "end of all things, God." If God be the end of all things, He must equally be the beginning of all things, and if He be the beginning and the ending, then it is for human intelligence to begin where He ended and not only to recognize and learn of the Creator in the things created, from chaos to cosmos, from atom to animal, from molecule to man, but to apply that recognition and that knowledge to the solution of the mysteries of life as it comes from the Creator's hand. What is this thing that men call "spontaneous generation?" There's no such thing as spontaneous generation. Preordained, inexorable, inflexible, law—lex—is the instrumental force in the hands of creative power. When Democritus and Lucretius sought and believed that in the aggregation and consolidation of atoms whirling in space, they had discovered the secret of the great cosmogenic forces that made a world, they but interpreted the operations of preordained, inflexible, inexorable law, creative law. Among those myriads of atoms whirling in space, and seeking consolidation under the compulsory guidance of lex, why should there not have been an equal transfusion of myriads of spherules or cells, animated by various life, as yet dormant, and awaiting the fiat that would in due time pronounce "Let there be light," and then, Let there be life. When law began chaos ended, and the world, "totus et teres," has, for countless generations, stood, the sturdy witness of creative law, and only to be shaken to its centre by the seismic operations of its own intra-terrestrial forces, subject equally to law, inflexi-

ble law! If these things be, why need we look further for the solution of our problem? May we not say that all life is the evolution of law? If that law may cause its primary genesis, can it not equally cause it to assume special form, and equally endow it with various life? If it can make that life live in otherwise dull, inert matter, may it not equally people it, and cause it to teem with multitudinous life, and if multitudinous life, why should it not take cell form? Do the palæozoic strata of the earth, as interpreted by geology, teach us nothing from the volume, upon whose leaves, superposed, the one upon the other, are recorded the evidences of pre-existing varied and protean forms, assuming such shape as was suited to terrestrial mutations and transformations? Is it impossible to conceive that the same law that begat and constructed the megalosaurus, could tint the little flower that breathed upon the air its fragrant breath close by the lair in which the Saurian monster stretched his hideous length? As human law is the governing and controlling force by which man regulates his diurnal and secular life, so creative law is the generating and compelling instrumentality by which God, the Great First Cause, evoked order out of chaos, flashed light into the brooding darkness, and animated the empty air with teeming and reproductive life. "Natura abhorret vacuum," and has abhorred it from the dawn of creation to the present hour. Erckmann Chatrian once said, "one of the greatest of human sufferings is, to ask of one's self, Does God exist?" God then is law, the same that has existed from the foundation of the world, and as He continues, so will it continue till chaos comes again.

Suprema lex, Creatoris omnipotentis mundi.

And now, like the mariner who casts his anchor to windward to stay and preserve him from threatening shoals and beetling rocks, so we cling to our anchor, the anchor of the Great First Cause, that shall save us from the perils of ignorance and doubt. Lex suprema has been ordained. Cosmos has emerged from chaos. The earth has revolved through its appointed cycles of rotation, and has flung aside its impotent crust, the effete exuviae that forbade its impregnation and germination. Life begins to appear where there was none; whence came it? In the whirl of atoms that were rushing into boundless space to build cosmos, did life germs, evolved by Suprema Lex, and strewn by creative fingers, commingle and settle and take root in the virgin soil, so new, and so ready to receive the young life committed to it, to nurse it, impart to it its own vitality, tenderly urge its periods of germination and incubation, help it to "burst its cerements," and come forth a living thing? And now the beauteous landscape, decked in its robe of verdure, smiles at the sun, and meets the eye of the Great First Cause, whose responsive smile says, "It is good." And so life begins, cell life! It were easy, were it consistent with our present purpose, to trace the successive transformations and changes occurring through

terrestrial periods, from the first indications of animal life and onward to man. That story has been well and fully told, and the record lives and stands out upon geologic pages in living letters, that every eye may see. It were equally easy to recount the story of successive generations of life, in its various forms, from the protozoon, the monad, the amoeba, the vibrio, leptothrix, the bathybius of Hæckel, etc., on through the age of albumen or gelatinous civilization, as told by the German, in his "History of Civilization, From the Evolutionist's Point of View, from the Most Distant Ages Down to Our Own Time." The cell, then, in its vitagenic operations in man, by whose instrumentality he is formed and constructed, and his faculties, and the powers that maintain his physical and mental life are kept in perpetual and unremitting force and activity is the subject of the open volume of life that invites our earnest and thoughtful reading. It is our business in the work that lies before us now, to follow the life in the cell that began when cosmos began. Cell life is our theme; it is the theme of all life, from the cell that animates the lowest of God's creation, onward and upward to that that generates thought in the brain of man, whereby he becomes "the image of his Maker."

It would be interesting at this point to follow out the suggestions that present themselves to us in relation to the cosmogony, as interpreted by the nebular hypothesis of Kant and Laplace, and accepted by many in place of telluric formation and consolidation by the atomic theory of Democritus, Lucretius, etc. By those who accept the origin and beginning of the earth's existence according to the nebular hypothesis of Kant and Laplace, it will be remembered that by these philosophers it was supposed and declared that originally the earth assumed the form of a huge mass of vapor or gas, incandescent with fervent heat, which, as the process of cooling went on, began to contract, and became subject to a movement of rotation. To use Kant's own words "the millions of bodies in the universe, which at present form the different solar systems, did not then exist. They originated only in consequence of an universal rotary movement or rotation, during which a number of masses acquired greater density than the remaining gaseous mass, and then acted upon the latter as central points of attraction. Thus arose a separation of the primary gaseous universe into a number of rotating nebulous spheres, which became more and more condensed. Our solar system was such a gigantic gaseous ball, all the particles of which revolved around a common central point, the solar nucleus. The original gaseous condition of the rotating bodies of the universe gradually changed by cooling and condensation into the fiery fluid or molten state of aggregation. By the process of condensation, heat was emitted, and the rotating planets soon changed into glowing balls of fire, which emitted light and heat. By loss of heat the melted mass on the surface of the fiery fluid ball became further condensed, and

thus arose a thin, firm crust, which enclosed a fiery, fluid nucleus." It is not proposed in this, our present purpose, to pursue to any great length the consideration of the many grand and important discoveries that have emanated from the original conception by Kant of the processes by which the earth was launched into existence, and became one of the vast system of worlds that now constitute the universe. The temptations offered by astronomy, and the facilities afforded for its ardent and absorbing investigation by the instruments designed and brought to such perfection by man's mechanical skill and ingenuity, are sufficiently alluring to be almost irresistible. But let us recall to our reader, that the special object upon which we have now fixed our eye, and to which every thought and inquiry must be directed, is to learn as much as possible of the evolution of life, from its earliest beginnings, which, as we believe, originally assumed cell form, and to endeavor to discover as nearly as may be, the laws that regulate and compel the vitagenic forces in their work of formation and construction whereby, from an original cell-entity, organisms are made, and projected into life. By means of that ingenious and wonderful instrument, the spectroscope, and the deductions, which, by its aid the observer is enabled to make through a process known as spectrum analysis, progressive increase is constantly being made in the knowledge of the character and chemical compositions of many worlds which now exist, and which were projected into existence by the same propulsive movement of rotation that made our world and gave to it its place and substantial solidarity in the boundless realms of space. Not only so, but the revelations by the spectroscope of the atmospheric, chemical and other conditions that prevail in the stellar worlds that nightly greet us with their soft and tremulous rays of luminous light, equally assure us that life lives in those starry worlds, and with eager and fascinated gaze, we wonder if it is like our own, and if, when "the elements shall melt with fervent heat, and the earth and sea shall give up their dead and time itself shall be no more," then reanimated, terrestrial and stellar life shall be united in one harmonious life coeval with eternity itself! It is now known that in our sun, and in many of the stellar bodies, there are very many of the same component elements that belong to our own earth. The spectrum shows us that many of the substances with which the earth abounds are palpably manifest in the sun. We need only name them as sodium, cadmium, calcium, strontium, barium, magnesium, iron, zinc, hydrogen, chromium, nickel, cobalt. So in the stellar worlds there are tellurium, hydrogen, iron, sodium, bismuth, antimony, magnesium, mercury, calcium and other elements that largely constitute our food and drink. Thus far have we gone in our search for the beginnings of life, and it would indeed be a "labor of love" to follow it outward through the mutations and transformations of the earth, from the time it swung into space, and to

wander with inquiring thought through the palæozoic ages, each marked by its own life manifestations, and each indicated by the indellible signs and emblems imprinted upon its telluric stratum, as it passed down the stream of time, but to be brought to light, and to the knowledge of the world by the incisive and unerring finger of science, and only perishable

"Amidst the war of elements
The wreck of matter and the crash of worlds."

And now again the question recurs, what is life? To this question, so full of interest, importance, and mystery, a recent writer thus responds. "Life is a form of chemical energy, or force acting on organic substances, and sprang into existence by the operation of a fixed and inexorable law known as chemical affinity," and he defines chemical affinity, as "a peculiar and subtle force of great energy which causes the simple atoms of different forms of matter to unite and form new bodies or compounds unlike the original elements. The results of its operations are well-known, but the exact method or process by which atoms unite to form new bodies is invisible, and unknown to us." But, as will be readily appreciated, this interpretation of life is by no means new, and leaves us as much in the dark as such an interpretation has always done. To say that life is a form of chemical energy or force acting on organic substances, and sprang into existence by a law known as chemical affinity, gives us no knowledge of what chemical affinity really is, whence it comes, how it effects its energies, nor does it teach us the nature of the organic substances upon which it expends those energies, whence they come, who or what has fashioned them into organic substances, and so we know nothing of their origin nor their "modus vivendi." Of course, if we follow out the formulæ adopted by chemistry and chemical science, we would say that such an organic substance is composed of so many atoms of oxygen, so many of hydrogen, of nitrogen, carbon or phosphorus, etc., and that under certain conditions it gives manifestations of life. The laws of chemistry are as inexorable as those of other fundamental laws, and the results of the operations of these laws make the science of chemistry one of the most wonderful among the many achievements of science to-day. But we must not be beguiled from the legitimate object of our pursuit. As the reader knows, we are looking for life manifestations, and as we began, so we must end and find them in the cell. No such vague and shadowy terms as chemical affinity and energy will satisfy our craving for more light, more light. To be inert and passive and submit to what is called the unknown and undiscoverable is to acknowledge defeat, and repulsive to our temperament. In nature nothing is inert that exists at all. The very term "vis inertie" implies the energy of passivity. All matter of every possible kind is capable of active or passive energies.

"Berkeley said there was no matter.
'Twas no matter what he said.

Thus did Byron dispose of *him*, and transfix him with a shaft from his full quiver of trenchant satire. Who can tell why an osteo-blastema begets living bone and nothing else, a hepatic cell secretes bile and nothing else; the nervous matter of the trinitarian olfactory receives and appropriates odors and fragrance of every possible kind, a fibrilla of the auditory nerve accepts one specific tone and no other, and lastly, and most marvellous of all, why a brain cell begets thought, intelligence and all other faculties of which the mind is capable? But there is a solution hidden away somewhere, in some dark and as yet unexplored cavern, and that awaits the searching light of science to reveal it. There is an inherent, subtle, vital power in the cell itself to produce life with all its powers. God only knows how, because He made it and transfused it with His own vitality. He made worlds with it, as His potential factor—God made man and built him up with cells, and by and by it will be our duty to question those cells, to wrestle with the mystery of them, and groan and sweat in the perhaps vain and inutile effort to wrest their mystery from them. But we shall ever continue to be "diligent and instant," that we may come near—be it ever so little—to the solution of these secret operations that go on within us without ceasing while life lasts.

ORGANIC EXTRACTS IN THE TREATMENT OF DISEASE.*

BY GEORGE L. FREEMAN, M. D.

ISOPATHY, or that therapeutic system which teaches that any disease will be cured by its own morbid products, originated about the dawn of history. We are informed that it met with favor at the hands of Xenocrates, Galen, Serapion, Paulus Egineta, and Dioscorides. Paracelsus, in modern times, is supposed to have revived the practice. Its followers adopted the motto "equalia equalibus," to distinguish their doctrine from Homœopathy (*similia similibus*) on the one hand, and Allopathy (*contraria contrariis*) on the other. Until within recent years, however, with the exception of vaccination, isopathy, as such, has not taken firm root in medical soil, as the employment of ox-gall, pepsin and pancreatin can scarcely be regarded as coming strictly within the meaning of the term.

True isopathy is altogether different from the isopathy above described, inasmuch as it consists in the administration of the organs of *healthy* animals for the relief of diseases affecting the same organs in the human subject. This method, which is an imitation of the ancient doctrine of signatures, and to which Dr. John Aulde has given the name of organopathy, has lately been brought into prominence—it might almost be said popularity—by Dr. William A. Hammond, through a lecture delivered, January 16, 1893, at the New

* Condensed for the *MEDICAL TIMES* from the *Boston Medical and Surgical Journal*, *The American Therapist*, *The Medical Age*, etc.

York Post-Graduate Medical School, and published in the *Medical Journal*, January 28. It should be stated that Dr. Hammond was anticipated in his discovery about forty-five years by Surgeon Herrmann, who, in 1848, published a book of 160 pages, entitled "True Isopathy, or, the Employment of Organs of Healthy Animals as Remedies in Diseases of the Same Organs in the Human Subject." So far, Dr. Hammond has limited his report to the effects observed from the exhibition of the extract obtained from the brain (cerebrine) and that obtained from the heart (cardine), but Herrmann enjoyed the distinction of having produced an entire system. "Hepatine," a tincture prepared from the liver of the fox or dog, was employed against the various liver diseases and for hydrophobia, but in this latter recommendation Herrmann was several centuries behind Dioscorides and Xenocrates. "Lienine," a tincture prepared from the dog's spleen, was used in the case of enlargement of the spleen; "renine," a tincture prepared from a healthy kidney, afforded relief in spasmodic retention of urine; "pulmonene" took the place of other remedies in pneumonia, and was also recommended in hemoptysis; and "dentine" was employed against toothache.

Dr. Hammond reports excellent results from the use of cerebrine in nervous prostration, neurasthenia, hysteria, general paresis, etc. He details the method of preparation of this extract. He states that five minims, diluted at the time with a similar quantity of distilled water, constitutes a hypodermic dose.

The most notable effects on the human system of a single dose are as follows, though in very strong, robust and large persons a somewhat larger dose is required, never, however, exceeding ten minims:

1. The pulse is increased in the course of from five to ten minutes, or even less in some cases, by about twenty beats in a minute, and is rendered stronger and fuller. At the same time there is a feeling of distension in the head, the face slightly flushed, and occasionally there is a mild frontal, vertical or occipital headache, or all combined, lasting, however, only a few minutes.

2. A feeling of exhilaration is experienced which endures for several hours. During this period the mind is more than usually active and more capable of effort. This condition is so well marked that if the dose be taken at about bedtime wakefulness is the result.

3. The quantity of urine excreted is increased, when other things are equal, by from eight to twelve ounces in the twenty-four hours.

4. The expulsive force of the bladder and the peristaltic action of the intestines are notably augmented, so much that in elderly persons in whom the bladder does not readily empty itself, without considerable abdominal effort, this action is no longer required, the bladder discharging itself fully and strongly, and any existing tendency to constipation disappears, and this to such an extent

that fluid operations are often produced from the rapid emptying of the intestines.

5. A decided increase in the muscular strength and endurance is noticed at once. Thus I found in my own case that I could "put up" a dumb-bell weighing forty-five pounds, fifteen times with my right arm and thirteen times with the left arm, while after a single dose of the extract I could lift the weight forty-five times with my right arm and thirty-seven times with my left arm.

In some cases in elderly persons an increase in the power of vision is produced, and the presbyopic condition disappears for a time.

7. An increase in the appetite and digestive power. Thus a person suffering from anorexia and nervous dyspepsia is relieved from symptoms, temporarily at least, after a single dose hypodermically administered.

These effects are generally observed after one hypodermic injection, and they continue for varying periods, some of them continuing for several days. In order that they may be lasting, two doses a day should be given every day, or every alternate day, as may be necessary, one in the morning and one in the afternoon, and kept up as long as the case under treatment seems to require. The most notable effects are seen in the general lessening of the phenomena accompanying advancing years. When some special disease is under treatment, the indications for a cessation of the injections will be sufficiently evident either by an amelioration or cure, or a failure to produce these results.

Dr. Hammond and his son, Prof. Graeme Hammond, have since delivered several lectures at the Post-Graduate on this subject, and have shown the results of the treatment in several patients suffering from paralysis, neurasthenia, insomnia, and various functional disorders, especially of the nervous system. In many of the cases exhibited a marked improvement was noted, but whether it was due to the medicinal or moral influence of the injected extract has not been proved.

The fact that Dr. Hammond is President of the American Neurological Society, retired Surgeon-General of the U. S. Army, a college lecturer, etc., is a greater causative element in the interest manifested in the treatment, than are the results which have thus far been obtained.

Professor C. L. Dana, of this city, well known as a progressive and independent student and teacher of neurology, has been using since July, 1892, various animal extracts of the thyroid gland, and of the brain tissue; as well as the rabic virus and Hunter's modification B of tuberculin, and the summary of his observations is as follows (*Boston Med. & Surg. Journal*, May 18, 1893): Locomotor ataxia (brain extract), eight cases (six treatment complete, two discontinued). Four improved, two not improved.

Bulbar paralysis (brain extract), one case. Cured.

Progressive muscular atrophy in late stages (brain extract), three cases. Not improved.

Epilepsy (brain extract, rabic virus and testicular extract), five cases. Three improved, two not improved. Two other cases whose course was known to me were improved.

Paralysis agitans (brain extract) one case. Not improved.

Tubercular tumor of brain (Hunter's modification B of tuberculin), one case. Not improved.

Basedow's disease (thyroid extract) one case. Symptoms increased.

Dementia (thyroid extract), one case. Improved.

The case of bulbar paralysis is given at length, and is highly interesting and important.

By way of comment, as indicating the favorable reception accorded to "organopathy," may be mentioned the fact that it has been extensively employed by Constantin Paul (*The Med. Weekly*, Jan. 27, 1893), of the Charité Hospital, Paris, during the past year in the treatment of neurasthenia and locomotor ataxia. His preparation is a ten per cent. glycerin extract of gray matter taken from the brain of a freshly killed sheep and finely divided. Fifty patients were treated with this substance, viz.: twenty-three cases of simple neurasthenia, three cases of neurasthenia associated with chlorosis and twenty-four cases of locomotor ataxia, with somewhat variable results. Benefits followed in twelve of the ataxic patients, in three of simple neurasthenia, in one of neurasthenia with chlorosis; in five cases of tabes and four of neurasthenia no change was perceptible, and fourteen cases were thrown out owing to irregularity in attendance. Out of thirty-six cases, therefore, but sixteen were benefited. Previous to July, 1892, Paul had similar results in the case of fifty-four patients treated in the same manner, although in all instances the first effect was favorable, producing a feeling of comfort and well-being with increased strength.

Organopathy has also been studied in mental diseases by Dr. A. Cullerre, superintendent of the lunatic asylum at La Roche-sur-Yon. The number of patients placed under treatment was fourteen; in eight, the results were satisfactory, moderately good in four, but *nil* in the remaining two.

The injection of testicular juice recommended by Brown-Séquard is, by virtue of the hydrochlorate of spermine which it contains, beneficial in hypochondria, cardiac debility, senile failure, locomotor ataxia, and in various forms of paralysis. Facts have also come to Brown-Séquard's knowledge which appear to demonstrate the happy influence of the injections in patients suffering from malignant disease. He gives the particulars of a case communicated to him by Dr. Labrosse, of Mustapha, in Algiers, who had treated by injections of testicle-juice (rabbit's) a woman with cancer of the womb beyond operation. After a dozen injections the patient, who was in the cachectic stage, and was so weak she could not leave her room, was able to walk about, and to go out driving, which she had been unable to do for a year. Moreover, under the influence of the injections alone, the discharge, which had been very profuse

and offensive, ceased altogether. Brown-Séquard promises to publish further facts of the same nature at some future time.

By far the most brilliant results, however, from this new departure in neurological therapeutics, have been obtained in myxœdema, by means of thyroid juice or tissue.

In this affection the thyroid gland is absent, undeveloped, or atrophied. The process of sanguification is, in consequence, profoundly disturbed. A semi-solid infiltration of mucoid material takes place into the connective tissue, especially of the face. Owing to the consistence of the infiltration, the surface does not pit on pressure. The features become so swollen and distorted that the patient is scarcely recognized by his friends. The mucous membrane of the mouth is thickened so that articulation is difficult and imperfect. The gait is awkward. The mental faculties are dulled. The patient is apathetic, melancholy, or actually imbecile. The temperature is subnormal. A subjective sensation of cold is constantly present. The individual sits in the sun, near the fire, or remains in bed for the mere sake of warmth. Perspiration is abolished. The urine is lessened. The hair becomes thin and falls. The structure of the nails alters. There is marked decline of strength.

As this train of symptoms had been observed in those from whom the thyroid gland had been totally removed on account of disease of that organ, and as ablation of the gland in animals was followed by similar manifestations, Prof. Victor Horsley proposed grafting of the thyroid, in case of myxœdema. The operation proved less successful than had been anticipated; but Dr. R. G. Murray, of Newcastle, ascertained that the subcutaneous injection of thyroid juice accomplished all that could be expected from implantation of the gland. The juice is obtained by mincing healthy glands, maceration, and expression. The quantity used is twenty-five minims once or twice a week, thrown into the connective tissue of the back. Some reaction may follow in the form of headache, giddiness, or faintness, but is not so severe as to interrupt treatment. Signal benefit follows this method. The skin softens, perspiration is restored, the mind brightens, the patient gains strength, the urine increases in amount, the temperature rises, the sense of chilliness leaves, and the features recover their normal expression. After the symptoms have decidedly ameliorated, it is not necessary that injections should be so frequently made. If recurrence manifests itself, the intervals between the injections must be shortened. Instead of this practice, it has now been discovered (by Dr. Hector Mackenzie) that simply eating the thyroid gland is effectual in removing the symptoms of the disease. At first the patient is given half a gland every day; but, as improvement occurs, the same quantity needs to be taken but twice or once a week, or even less often. The demands of different cases vary, and permanent recovery depends upon the consumption, at inter-

vals, of thyroid gland, which, in such cases, is to be regarded as a therapeutic food. In administering it, the gland is cut into fine longitudinal slices, then minced into small pieces, after which it can be taken, without further preparation, in warm soup, in which its presence attracts no notice. Another procedure is to fry the gland sufficiently to make it palatable. This plan seems to be as successful as any of the preceding, and, if so, deserves preference on account of its simplicity.

The remarkable success attending the use of these preparations has stimulated investigators to find some method of producing a dry, stable preparation to replace the crude gland or the extracts that have been employed. Guided by a belief that the thyroid gland might contain some hitherto undescribed ferment, White (*British Med. Jour.*, No. 1676, p. 289) determined to try whether, by the formation of gelatinous or flocculent precipitates in liquid extracts known to possess the desired activity, the active principle could not be separated from the large amount of proteid and other organic substances present. The glands were first exhausted with a mixture of equal parts of glycerin and water. The filtered fluid was acidulated with phosphoric acid, and calcium hydrate was added until an alkaline reaction was produced. The precipitate was filtered out as rapidly as possible, washed, and dried over sulphuric acid without heat. Of the resulting powder the dose is 3 grains. Good results attended its use.

Some experiments in the treatment of syphilis merit attention. Tommasoli, of Modena, conceived the idea that blood-serum, drawn from an animal insusceptible to syphilis, might prove antidotal when introduced within the system of a human being suffering from that disease. In the absence of lamb's blood, Sartori made use of that of the ox. The results were equal, if not superior. A drachm and a half were thrown alternately into the connective tissue of each buttock. The syphilitic manifestations were suppressed without further treatment.

The Japanese seem to enjoy an immunity to scarlatina. In view of this fact it has been proposed to inject a portion of serum drawn from a native of Japan into Caucasians as a prophylactic measure.

The experiments which have been carried on, and in some cases successfully, to secure immunity against certain infectious diseases, will eventually prove of value to practical medicine. Of this nature are the investigations of Behring and Kitasato concerning diphtheria and tetanus, and those of Drs. G. and F. Klemperer in regard to pneumonia. The serum of animals immune to tetanus and diphtheria cures these diseases. Similarly, in pneumonia, the authors quoted write: "If the progress of the experiments and the interpretation we place upon them be correct, we have, in the serum of immune rabbits, the poisonous action of which we are able to destroy, a specific against

pneumonia." In tetanus and pneumonia the principle of immunization has already been applied, with encouraging results, to human beings suffering from these affections.

Such, concisely stated, have been the principal achievements, hitherto, in this new field of medical investigation. As to what may be reasonably expected from it in the future, the following reflections, from a recent editorial in the *Boston Medical and Surgical Journal*, may perhaps, help us to determine. At all events, they present an aspect of the case which it can do no harm to bear in mind.

"While we wish well to the new therapeutics, and admit, in general, the doctrines on which it is based, we feel it a duty to assert that the facts do not seem to us to justify any such extravagant statements as those made by some of the advocates of the organic extracts. Indeed, this is one of the cases where it is the duty of every considerate man to distrust even his own power of observation, and still more his own power of referring what he sees to its true cause. The time has not even yet come when we can say with safety that now we will wipe off the slate and begin to count our observations as of permanent value. We must not forget that chapter in the long history of error, which deals with the suspension treatment of tabes. There is no marvel claimed for testiculine which cannot be fully paralysed by results clearly referable to hypnotism, and—take it as you will—the remarkable investigations of late years into this branch of psychology have shown that mental influences have an enormous power of removing symptoms. . . . The phantom of "suggestion" often stands behind the physician's chair, invisible alike to him and to his patient, though both of them believe that they have, Faust-like, discovered and used spells which would have forced him to materialize had he been present.

"It is true that the wonderful history of myxœdema and its treatment should make us ready for new developments in the same line, and anything that is equally attested will find itself equally accepted; but there is as yet neither experiment or observation which place the results which are claimed to follow injections of testiculine and cerebrine on anything like the same plane.

"Myxœdema we can cause and we can cure, to a practical certainty, by removing or supplying the thyroid secretion. Can we cause and cure tabes or neurasthenia or artero-sclerosis with similar certainty, by removing the testes or by injections of spermatoc extract?

"Most of the signs of improvement have been such as were furnished by the patient's own feelings. It is said that many 'cures' have been made; but in view of the fact that many failures to cure are likewise on record, it is permissible to question whether the disease itself has really been cured at all. At any rate, this result does not occur as frequently as it does in myxœdema.

"'Ameliorations' do not count for much with a new remedy.

"Castration causes a remarkable train of results, and it would be a reasonable and a highly interesting experiment to see if these could not prevented or cured by testiculine, but neither the ox nor the eunuch is neurasthenic or tabetic.

"It may eventually be proved by accurate physiological experimentation that testiculine does exert some powerful action on the nervous system. These proofs would be highly welcome, but they are not yet forthcoming.

"It is significant that Professor Brown-Séquard concludes his paper by saying: 'When we know how great, how various, are the morbid physical and dynamical attractions that the nervous system can produce, it is easy to understand that what it can do in one way it can also do in just the opposite way, so as to re-establish the normal state, physically and dynamically, and this may serve to explain the extreme variety of the favorable effects that may be due to certain liquids which increase considerably (as is proved) the power of the cerebro-spinal centres.'

"Not to speak of the uncertainty of the last assumption in this reasoning, the thought suggests itself whether, if the strengthened nervous system can work these varied effects, the argument in favor of unsuspected 'suggestion' (or 'expectancy,' if the term be preferred), which is well-known to strengthen the nervous system, is not reinforced by these considerations.

"We do not definitely take this ground, for it would be a great misfortune if any investigation of value should be checked, and any opportunity omitted for increasing our therapeutic resources. There is nothing more improbable in the idea that the disease should be cured by one organic fluid than that it should be caused by another; but it is a question of evidence in each case whether or not this is true and a large amount of evidence is required to establish so new a proposition.

"We should gladly welcome the discovery of diets or organic ferments that can neutralize the causes of disease, but the pendulum ought not to be allowed to swing so fast and far that its inevitable return will occur with destructive force.

"Some of the reports would almost make it appear as if we might hope to cure everything with anything, so long as the remedy bore the magic name of 'organic.' We do not believe that this will prove to be the case."

The Urine in Phthisis.—Dr. Hale-White, (*Brit. Med. Jour.*) reports two conditions found in the urine of phthisical patients. The specimens were one hundred and eighty-two in number. The urine remained acid for a greater length of time than is usual. One specimen kept the reaction for four months. From the sediment found the author believes that a form of acid fermentation had existed, yeast-like organisms in abundance with few bacilli being found. The reverse is found in alkaline changes. The second condition was a gradual change in color, the specimens becoming black. This remained for a long time. These changes are considered as due to the tubercle bacilli.

REST AS A THERAPEUTIC AGENT IN CHRONIC PULMONARY TUBERCULOSIS.*

BY KARL VON RUCK, M. D., ASHEVILLE, N. C.

Med. Director Winyal Sanitarium for Diseases of Lungs and Throat.

IT is not my purpose to introduce this subject with a review of the opinions held by the profession on the value of rest as a therapeutic agent in general, nor even to cite many of the contributions of recent years as to its utility in pulmonary tuberculosis; and I am induced to bring it to your attention only because of a manifest tendency to over-estimate its value and to recommend it as a general means for a cure.

In a recent paper by Dr. Mays, of Philadelphia, read before the American Climatological Association, May 25th, 1893, this tendency is particularly manifest, and in it the author compares the condition of the phthisical patient to nutritive bankruptcy, due to excessive expenditure induced by wasting disease, and on that account he advocates rest in bed for prolonged periods as a means for limiting excessive expenditure and for storing up new capital, implying that if the nutrition of the patient be thus restored, the disease would then be cured.

Regrettable as it is, this simple formula does not act so specifically as we might wish it to do, and while I insist upon rest under certain complications, in the course of phthisis, as highly essential, I can see in it only an aid toward complying with indications which may or may not be present in a given case. I therefore object to the recommendation of rest just because a patient is a consumptive, and proceed to consider more particularly its indications and limitations as I have found them in the course of my experience with many hundreds of phthisical patients.

I presume that we are all agreed that rest in bed for prolonged periods is not conducive to the best nutrition of the healthy organism; if we resort to it nevertheless, we find our subjects soon to lose in appetite, they take and assimilate less food, their muscles become soft and diminish in size, and after a time anæmia and loss of flesh and strength are apt to result. If we attempt to counteract these effects by forced feeding, we find that larger quantities of solid food than the patient's appetite demands, soon lead to gastro-intestinal complications and to loathing of the food offered and that in most cases it is not appropriated even if we can induce the subject to take it. Thus we soon become restricted to a more or less liquid diet, and considerable quantities even of it, are apt to cause derangements of the digestive organs.

To keep such a healthy subject in good condition under prolonged rest in bed we find it necessary to substitute massage or electricity, or both. Such a subject may then store up fat, which is, however,

* Read in the section of General Medicine, Pan-American Medical Congress, at Washington, Sept. 5, 1893.

not always synonymous with improved nutrition.

All this is equally true in chronic pulmonary tuberculosis, as long as no complications have occurred by which the tubercular deposit is caused to break down and to suppurate; in other words as long as the patient is in the so-called early stage.

Such patient has either acquired or inherited conditions which temporarily or permanently left their stamp upon his constitution and resisting power, and which under the existing mode of life of the individual frequently induce defective nutrition, which makes the tubercular infection possible, or causes it to extend, and these same conditions as well as the tubercular involvement of the lung, limit the amount of physical and mental labor that can be taken with advantage, but absolute rest for prolonged periods is not only not indicated; on the contrary at this stage of the disease an out of door life with proper exercise, limited for the individual to fall short of the production of sensible fatigue, is highly essential for the improvement of nutrition, and as an aid to an ultimate cure.

I would therefore be understood that in my experience the chronic "*purely tubercular*" affection of the lung is not responsible for the nutritive deficiency, but that the latter precedes the manifestation of the tubercular disease and that the subsequent wasting and fever are not caused by the tuberculosis directly, but are complications which may or may not arise in its course.

In some of the complications which occur in the course of the disease, rest in bed is essential until their removal is accomplished, and among these I may particularly mention pleurisy, hemorrhage and septic fever. With an acute pleurisy or a pulmonary hemorrhage the patient seeks his bed voluntarily; not so with the septic fever, especially when it is mild or intermittent. Indeed many practitioners allow their patients to be about and advise exercise, regardless of its presence.

The absorption into the circulation of noxious products which induce the septic fever can only occur when certain other pathogenic germs have gained entrance to the tubercular deposit, causing its softening and breaking down, and without such additional infection, tubercular deposits do not undergo suppurative and destructive changes, on the contrary, they remain quiescent for indefinite periods and tend to the development of connective tissue proliferation and fibrosis, which lead to encapsulating and atrophy of the tubercular tissue and thus to a relative cure of the disease.

If now prolonged rest in bed could prevent the additional infection spoken of, or if it could hasten or favor the connective tissue changes and encapsulating of the tubercular deposit before septic infection has occurred, then the treatment could be recommended in the early uncomplicated stages of the disease also; that is to say, for the tubercular disease itself. That it cannot do the former I need only mention, and since we can only with difficulty keep such a patient at his present nutrition under absolute rest, it remains only to inquire

how, and to what degree it may be useful to aid the patient in overcoming septic complications which, when once established, control the entire situation.

In the presence of sepsis, no direct treatment for the tubercular disease can be of avail, and to give such a patient tuberculin, creosote or other supposed specific remedies against tuberculosis, I consider not only useless but as injurious, and as diverting our efforts from the real issue.

Rest in bed becomes now imperative, not because of the tuberculosis, but because of the complicating septic fever; which damages the heart, induces degenerative processes in its muscular fibres, and causes other deleterious effects upon the organism, all tending to wasting and exhaustion of the organism.

Even before the septic fever occurs, the heart of the patient is called upon for extra labor on account of mechanical obstruction in the lung to the free flow of blood from the right to the left ventricle, and on that account the amount of physical and mental labor needs always to be regulated and often materially restricted from the very beginning of the disease. I have heretofore called attention to this subject in a paper presented to the American Climatological Association, entitled "*The Detrimental Effects of Over-Exertion in Pulmonary Tuberculosis*," and published in the transactions of the Association for 1890.

In the presence of such complicating fever, the heart is called upon for additional labor still, and if its contractile power is steadily diminished by the fever, it is not difficult to see that the conditions for passive congestion, hemorrhage, and defective nutrition of the involved lung tissue and the progressive breaking down of the tubercular deposits are highly favored.

The indication under such circumstances is to secure a good heart action and to preserve it by lightening the heart's labor. For the former purpose we nourish our patient as well as possible, and use stimulants whenever they appear necessary. For the latter, rest in the recumbent position is one of our most important means, and it thus becomes an indirect aid to nutrition, not only in septic fever engrafted upon tuberculosis, but in all prolonged febrile states.

I find from a large practical experience that the more severe septic or so-called hectic fevers of pulmonary tuberculosis cannot be successfully managed without rest in the recumbent position, and that even slighter degrees are more quickly controlled by such rest; yet in severer cases we cannot depend upon rest alone, although without any other aid we note its favorable influence upon the pulse as well as upon the local processes, and observe the cough and expectoration to diminish and the fever to become less intense; nevertheless it is not often entirely controlled, and the patient continues to go down only at a slower pace.

Fortunately we can under such a contingency bring to our aid other very useful remedies, of which

deserve particular mention, hydropathic applications and the subcutaneous use of nitrate of strychnine; and there are few severe cases of septic fever in connection with tuberculosis in which we are not obliged to resort to one or both to help us through the critical period.

Even so simple an application as an ice-bag over the region of the heart may turn the scale in the right direction, and with the combined therapeutic resources at our command when wisely chosen and applied, we may bring a severe septic process to an arrestment.

During this enforced rest the application of massage and the exposure of the patient to pure air and sunlight must be carefully attended to; when improvement is well under way and the temperature remains normal or nearly so, the patient may be permitted to sit up and walk out of doors, beginning with a quarter of an hour, and increasing the time slowly as the general condition and strength will permit.

These liberties must be controlled by their effect upon the circulation, and when unfavorable must be abandoned, to be resumed at a later date. Only when the pulse remains good and is not materially increased in frequency beyond the degree observed in comparative health, and after the temperature has for several weeks remained at or near the normal, can we think of allowing light exercise, and then its employment within the limits of fatigue will be found to aid in still more rapid general improvement in the advanced, the same as in the early stage cases.

THE TREATMENT OF PHTHISIS, BASED ON ITS NERVOUS OR REFLEX ORIGIN.

By M. O. TERRY, M.D., UTICA, N. Y.

INSANITY, hysteria, neuralgia, syphilis, epilepsy, diabetes, lupus, or any diseased conditions remote from the lungs may through reflex conduction cause phthisis.

2. Correct as soon as possible any functional or pathological disturbances existing in any part of the body.

3. If the case be fibroid phthisis and a lacerated cervix or diseased rectum exist with it, the temperature will drop to the normal point in many cases within twenty-four hours after the operation for the removal of either difficulty.

4. In the catarrhal form, the temperature may not be reduced so rapidly, as the suppurative condition may need the supplementary treatment of some antiseptic nebulizing sprays or evaporating inhalants.

5. Non-surgical patients are usually slower to recover, and therefore curative measures will influence the phthical state less speedily, yet as surely, if each condition be met by its specific treatment.

6. Due attention should be paid to the medical, surgical, physiological, hygienical, atmospheric and calisthenical features of the case,

for it will require all of these measures in many cases to succeed.

7. Medical treatment of phthisis requires for the reduction of abnormal temperature such remedies as phenacetine, gelsemium, listerine, phenic acid, eucalyptol, and salt or alcohol and water sponging.

8. The physiological conditions to be met requires a liquid diet of oatmeal, cracked wheat, milk, whisky, beer, mutton broth, soups, oils of various kinds, as butter, bacon, sweet or cod liver oil, malt, with or without alcohol, feeding every three hours if possible. Food often requires peptonizing.

9. The hygienical conditions to be met consists of pure air, of the pine woods if possible; deep breathing; regular bathing each day with salt or alcohol and water, and skin brushing.

10. The calisthenical treatment, which can be carried out with benefit after the fever subsides, consists of horseback riding, and various exercises calculated to increase lung expansion. Take from ten to twenty deep inhalations as often as three times a day.

11. The atmospherical conditions necessary are, steaming the air with oil of eucalyptol, one-half drachm to a pint of water, the same of creolin or pine-needle oil; the burning of sulphur, and the super-charging of the air with oxygen is of inestimable value. These preparations to be used in rotation. The catarrhal form of phthisis requires that the air should be constantly medicated.

12. Conclusion: It is our belief that a large per cent. of the patients who are sent to the woods with consumption and die there, might have been saved had they undergone preliminary treatment. A comprehension of this fact, and that tuberculosis is in most, if not all cases, a secondary condition, rather than a primary one, and that the bacillus is but the microscopical germ of death, and therefore that with a removal of the causes leading to disintegration of tissues, together with a systematic and persevering course of treatment, will, it is our belief, decrease the mortality in fifty per cent. of the cases now considered hopeless, and sent to the woods in desperation by the physician.

Some years ago it is reported Dr. Virchow, the eminent man of science, had been sharply criticising Prince Bismarck, who was then Chancellor. At the end of a particularly severe attack, Bismarck felt himself personally affronted, and sent seconds to Virchow with a challenge to fight a duel. The man of science was found in his laboratory, hard at work at experiments which had for their object the discovery of a means of destroying trichinae, which were making great ravages in Germany. "Oh," said the doctor, "a challenge from Prince Bismarck, eh? Well, well, as I am the challenged party, I suppose I have the choice of weapons. Here they are!" He held up two large sausages, which seemed to be exactly alike. "One of these sausages," he said, "is filled with trichinae—it is deadly. The other is perfectly wholesome. Externally they cannot be told apart. Let His Excellency do me the honor to choose whichever of these he wishes and eat it, and I will eat the other." Though the proposition was as reasonable as any duelling proposition could be, Prince B's representatives refused it. No duel was fought, and no one accused Virchow of cowardice.

CLINIQUE.

WARD'S ISLAND HOSPITAL, G. T. STEWART, A. M., M. D.,
CHIEF OF STAFF.

THE following cases and autopsies are reported as being of interest:

THREE CASES REPORTED BY GORE S. HARRINGTON, M. D., HOUSE PHYSICIAN, WARD'S ISLAND HOSPITAL.

Case 1.—Patrick G—, 45 years of age, and an employe of the hospital, was admitted to my ward on the evening of June 4th, 1893. He had had a chill that afternoon, and was complaining of pain in his left side, respiration anxious and rapid, and temperature 102.6°. Within the next thirty-six hours, his symptoms and the physical signs showed an unmistakable case of lobar pneumonia involving the left lower lobe. The case progressed very favorably until June 9th, when, without any rise in temperature or other apparent cause, his pulse, which had ranged from 90 to 108, became more rapid and feeble, numbering that evening 136. His temperature was 102.6°. Whiskey was given as a stimulant. The next morning his pulse was 140, weaker, and less in volume, and his temperature had fallen to 101.4°. He was given strychnia sulph. 1-50 gr., hypodermically, every three hours, in addition to the whiskey, but without any appreciable improvement. By the evening of June 11th, despite the fact that the amount of whiskey had been increased, the strychnia sulph. continued as before, and two minims of digitalis given every two hours, his pulse was 160, very weak, and so lacking in volume that it could with difficulty be counted. On auscultation, the heart sounds were feeble and clicky. His temperature was still 101.4°. On the morning of June 12th, his temperature had fallen to 100.6°, but his pulse was so feeble and rapid that I could not count it. According to the nurse's counting, it was 160. The patient's bowels, which previously had moved regularly, had not moved within the last three days, but, until that day, little importance had been attached to the fact, because his diet had consisted solely of beef peptones and kumyss, two articles which leave little fecal residue. However, it was deemed advisable that his bowels should now be moved, and accordingly, he was ordered an enema of half ounce of glycerine. It caused him to have a small partly formed stool of yellowish fecal matter. Within two hours his pulse became stronger and less rapid, and, by 6 P. M., had dropped to 116 and was very fair in quality. His temperature had also fallen to 100°. The following morning his pulse was 84, and of such a character that the whiskey was reduced in amount, the strychnia given only every six hours, and the digitalis discontinued. This favorable change in his condition was a gratifying surprise, and the patient, from this time on, made a rapid convalescence, during which his bowels were purposely allowed to re-

main unmoved for three days, and, although his temperature was normal, his pulse again rose to 96, but promptly fell to 80 after his bowels had been freely moved by an enema. These two circumstances made the case an interesting one, but whether the moving of the bowels was the cause of the favorable change in his pulse, or simply a coincidence, is a question. The other symptoms of the patient have been intentionally omitted because none of them were in the least alarming or unusual in such a case.

Case 2.—James L—, age 39, was admitted to the hospital May 25th, 1893, suffering from acute lobar pneumonia of left lower lobe. His history disclosed the fact that he was a very hard drinker, frequently drinking alcohol as pure as he could obtain it, and that he had contracted syphilis ten years previously. He had had a severe chill two days before admission, and was compelled to remain in bed the day following it. On admission, he complained of a severe headache, bad taste in the mouth, loss of appetite, looseness of the bowels, and pain in the left side, worse on taking a long breath or coughing. Short, dry cough, backache, and general prostration. Was very thirsty, desiring large quantities of water. Tongue was coated white, temperature 104°, pulse 132 and respiration 38. There was dullness over the left lower lobe which later on became flat. The crepitant rale could be distinctly heard and vocal resonance was somewhat increased. He was immediately put upon a milk diet and given bryonia. The patient did very well for two days. On the morning of the 20th, his pulse seemed to be somewhat lacking in quality, and, as it was nearing the probable crisis, he was ordered milk punches in addition to his previous diet. That evening he had become delirious, and his general condition was unimproved. He was then ordered whiskey 3 ss every two hours, and Hy os., every hour. Next morning, I was called to see him at 6 A. M., and found him in collapse. His temperature was 99°, pulse 132 and very feeble indeed. Respiration 30, still delirious and very restless, constantly throwing the bed clothing off himself. Was covered with a cold, clammy perspiration and feet were cold. There was flatness over left lower lobe, bronchial breathing, some few moist rales and bronchophony. Hot water bottles were put to his feet and around his legs, nitro glycerine 1-50 gr. was given hypodermically every hour, and all the whiskey he would take. Also veratrum album every half hour. At 9 A. M. his condition was less favorable, and hypodermics of whiskey and dig. (miv) every three hours were added to this treatment. At 12 M. his temperature was 98°. Some œdema of lungs, stools involuntary, and cold to knees. At 4 P. M., temperature was 97°, and pulse was so feeble that it could not be counted. The patient made an effort to vomit at 6 P. M., and expired. An autopsy was held the following day, and is reported below.

Case 3.—William S—, age 26, was admitted to the hospital June 27, 1893. Diagnosis phthisis.

The patient was extremely weak and delirious. He could give no history of himself, except that he had contracted syphilis, four years previously, had been sick in a New York hospital for four months, and had had hemorrhages. He was dull and lethargic and on being aroused looked around with a vacant stare. No appetite, thirsty; but unable to retain anything in his stomach. This vomiting was persistent, and the vomited fluid was greenish black and exceedingly offensive. Numerous remedies were given him to arrest the vomiting; but without any effect. He also had a very troublesome cough, the expectoration being abundant and pus-like in character. There was marked dullness over the right and left upper lobes, though over the latter the cracked metal percussion note could be made out at several points. Breathing was bronchical over the right upper lobe, and cavernous in many places on the left. Vocal fremitus and resonance was increased over both sides of the chest. The patient gradually grew worse and during the forenoon of the 29th became paralyzed in the lower extremities. In the early evening the arms were involved, and the tongue could not be protruded. He died at 3 A. M. June 30. An autopsy was held and is also reported below.

AUTOPSIES REPORTED BY G. T. STEWART, A. M., M. D.

James L.—, age 39.—Died May 29th, 1893. Autopsy held May 30th, 1893, by Dr. G. S. Harrington. Rigor mortis was well marked, body fairly nourished. Heart weighed 12 oz. Pericardial fluid deficient. Calcareous deposits at base of middle cusp of aortic valves; mitral, tricuspid and pulmonary valves normal; evidence of an old endocarditis; muscular tissue firm. Right lung weighed 19 oz. Adherent all around; lung emphysematous, vedomatous and passively congested. Left lung weighed 30 oz. Was firmly adherent posteriorly; lower lobe sank; some emphysema and passive congestion in upper lobe; red hepatization of lower lobe, going on to the gray. Liver weighed 62 oz. Was adherent at inferior aspect; substance infiltrated with fat. Stomach showed evidence of chronic and acute catarrhal gastritis. Spleen weighed 5 oz. Was congested and very soft. The kidneys each weighed 5 oz. Capsules were adherent, pyramids indistinct; cortical substances increased; both were anæmic. Vermiform appendix firmly adherent to colon; intestines apparently normal.

William S.—, age 26.—Died June 30th, 1893. Autopsy held twelve hours after death by Dr. G. S. Harrington. Rigor mortis was well marked; body fairly nourished. Heart weighed 14 oz. Deficiency of fluid in pericardial sac; small patches of atheroma in aorta and around pulmonary artery; all the valves normal; tissue firm. Left lung weighed 24 oz. Well marked pleuritic adhesions all over; several small cavities full of pus in apex; upper lobe tuberculous and full of cavities; lower lobe somewhat consolidated, tuberculous and emphysematous; chronic bronchitis. Right lung

weighed 16 oz. No pleuritic adhesions; several old cicatrices in apex; lower lobe emphysematous, oedematous and passively congested; upper and middle lobe tuberculous; chronic bronchitis. Liver weighed 6 oz. Evidence of perihepatitis; right lobe undergoing fatty infiltration. Spleen normal. The outside wall of the stomach was very dark in color and had the appearance of gangrene; at the lower border near the pyloric end a cancerous nodule was found which was approaching the stage of ulceration; mucous membrane was almost black; very severe chronic catarrhal gastritis. Pancreas was hardened and cancerous. The kidneys each weighed 10 oz. Capsules were adherent; pyramids obliterated. The whole alimentary canal was in a state of internal congestion. Bladder walls were enormously thickened; evidence of acute cystitis.

Fanny S.—, age 23.—Died March 30th, 1893. Autopsy held twelve hours after death by Dr. C. H. Bowker. Rigor mortis was well marked; body emaciated. Heart weighed 8 oz. Displaced upward; pericardium strongly adherent to diaphragm; pericardial fluid normal in amount; aortic and pulmonary valves normal; mitral valves shortened; chordæ tendinæ slightly lengthened; tricuspid valves shortened; muscular tissues soft; walls atrophied; heart full of post-mortem clots. Left lung weighed 8 oz. Strongly adherent, upper lobe emphysematous; lower lobe oedematous and congested. Right lung weighed 11 oz. Strongly adherent to diaphragm and chest walls; upper and middle lobes congested and emphysematous; lower lobe congested and oedematous. Liver weighed 78 oz. Strongly adherent all around; first stage of cirrhosis in right lobe; the other lobes cirrhotic in second stage. Gall bladder distended with bile, which was dark colored and very thick. The stomach was very much enlarged and filled with dark greenish fluid; walls very much thickened, especially at pyloric extremity. Pancreas adherent to surrounding viscera. Right kidney weighed 3 oz. Capsule was very thick but non-adherent; pyramids obliterated, cysts full of fluid filling their places; cortical portion almost gone. Left kidney weighed six oz. Capsule thickened and non-adherent; pyramids indistinct. Around pelvis, peritoneum and intestines were numerous adhesions; intestines much congested; pus in cellular tissue. In the right iliac region, a large tumor of the consistency of liver tissue was found, which was about four inches in diameter, light in color, and somewhat lobulated, a portion of which had undergone caseation; also two other tumors of the same color and consistency, one in the right inguinal region attached to the Poupart's ligament, the other below the last mentioned but not connected; there were some district masses on the left side of pelvis attached to ilium, the size of pigeon's eggs. The thoracic duct was a cancerous mass as large as a finger and of the consistency of the above mentioned tumors. Uterus, broad ligament and ovaries displaced upward; vagina elongated. Bladder walls very much thickened.

FACTS VS. THEORIES.

BY GEORGE B. DURRIE, M.D.

IT is my belief that to the average physician a few facts gathered from actual experience are more valuable than any number of theories, however carefully worked out. Theories are well enough as far as they go, oftentimes make very pleasant reading, but bedside tests show us what to depend upon in the hour of trial, when confidence is most needed. Acting on this belief, I propose giving, briefly, the history of one or two cases that lately came under my observation and from which I gathered some knowledge that I am sure will be of use to me, and I trust the relation may not be without interest to others.

I was called to see a lady about sixty-five years of age, who was suffering from an eczematous eruption on the face and hands. In many ways it was like an erythema, so that at first I was somewhat in doubt, but the severity of the symptoms soon dispelled my doubts. The eruption was on the backs of the hands, about the mouth, around the ears, and on the forehead. The burning and itching were intense, and on this account she sought the aid of a doctor. The lady was a stranger to me, but had been induced by a mutual friend to send for me, and I was extremely desirous of giving the much-needed relief. After questioning her carefully, a remedy was prescribed which it seemed to me was Homœopathic to the case. Calling two days after, and finding little or no improvement, I changed the remedy, having meanwhile studied up the symptoms with a view to a "key note" or a "characteristic." At the next visit the patient was inclined to think that possibly the irritation was slightly diminished—and I may remark here that the mind of the patient was most favorably disposed both towards the treatment and towards myself—a point of no small importance. Believing that there was some improvement, the remedy was continued, but two days after I was mortified to find that the trouble was worse than ever. Perhaps some one will say that I should have discontinued the remedy and given *sacch. lactis* till the improvement ceased, and possibly that course might have made a difference in the result, but I must say that I doubt it. The patient showed no signs of waning confidence, either in me or in the treatment, and heroically persisted in believing that we could and would conquer. I now, after more study and thought, chose another remedy, which it seemed to me *must* cover the symptoms, but at the same time decided to make use of an external application which had in other instances done me good service; and she *did* get a little relief, principally, I think, from the outward application. I have forgotten to mention that accompanying the eruption was a great irritation of the bladder, giving rise to a frequent call to urinate, in consequence of which she was compelled to get out of

bed several times during the night. The slight improvement which had followed the last prescription did not last, I regret to say, and it was quite apparent that the disease had not been controlled by the remedies. On the contrary, the eruption had extended somewhat on the arms. The itching and burning were so intense, particularly at night, that the poor woman had scarcely any rest whatever and was becoming very much exhausted and nervous.

Not to make too long a story, I may say that I continued to prescribe in this way for two weeks or more, all the time hoping to drag out from the depths of the materia medica a drug which would meet the indications and cure the disease—but, with the exception of an occasional gleam of hope, my efforts were without avail.

At last, after passing a night of great suffering, the patient decided to call in a specialist (a course which her friends had for some time been urging her to take, but which she had firmly refused to do) and I willingly consented. The sequel will be very brief.

He (the specialist) *came*, he *saw*, and advised that the patient drink two quarts of lithia water a day, when, "*presto!*" the trouble was over. The itching and burning began to abate almost at once, and in the course of three or four days she was cured. Of course, it is quite possible that some one more thoroughly versed in the mysteries of the Homœopathic materia medica might have succeeded where I failed, but certain it is that no remedy could have been more efficacious than the *water*, and no result more satisfactory to the patient, whose only regret was that I had not thought of it instead of the other man, in which regret I fully agreed.

I am reminded by this case of one that occurred in my practice a few years ago, which gave me a good deal of trouble at the time, but which was cured very promptly by an external application. The disease was *pruritus pudendi*, of a very severe character, in a woman who was pregnant. The irritation was so great that for weeks she was unable to leave her room, and for most of the time was confined to her bed. Remedies almost without number, both internal and external, were tried, without avail, till it was suggested to make use of an ointment of calomel, one drachm to the ounce. The troublesome symptoms were relieved at once and the disease promptly cured.

In another instance, altogether unlike the two just described, I found prompt and most efficient aid from an agent, the use of which is severely condemned by some (so called) strict Homœopaths—viz.: sulphate of morphia—by hypodermic injection. I was summoned about five o'clock in the morning to attend a lady who was said to be very ill, having been vomiting almost continuously for several hours. On arriving at the house I found the patient in a most distressing condition. She had commenced vomiting about one o'clock, and up to the time of my arrival had had scarcely a respite of five minutes.

The family had done everything in their power, not wishing to call the doctor till morning, but she was now nearly exhausted, and looked, as they all did, most eagerly to me for relief. I gave a few remedies—those which seemed to be indicated—but the retching still continued. I did not wait long; the patient was suffering greatly, and I could not ask her to wait some hours for the remedy to act, but, taking my syringe, I prepared a strong dose of morphia, about $\frac{1}{2}$ of a grain, and injected it into the arm. The result was most gratifying. I'm sure I shall not soon forget the look and smile with which the poor woman greeted me as she said, "It's all serene now." And it was—no unpleasant symptoms followed the large dose of morphia, and there was no return of the vomiting. I believe I felt almost as grateful to the little instrument as did the patient, for it's a trying position to be looked to for aid and not to be able to give it. The theory may be all wrong, but the fact was very plain and very satisfactory.

IMPORTANCE OF DYSPEPSIA.

BY HUGH MATHEWSON PATTON, M. D.,
MONTREAL, CANADA.

IT has been estimated that nine tenths of the cases of heart disease, kidney disease and rheumatism have origin in the faulty assimilation of the food; the remaining tenth finding their source in the misuse of alcohol, accident and exposure. This leaves out heredity, and presupposes the individual to have started life with a set of organs in working order. So that if the physician will bend his energies to the correction of the habits which lead to indigestion, before organic disease superimposes simple deranged function, he will in a large proportion of cases restore his patient to the comfort ensuing from smoothly working organs, and ward off organic disease in the organs noted above.

Crossing over a few days ago from Ireland, a prominent Montrealer asked my advice in regard to what he spoke of as swelling in his feet. He was a magnificent specimen of a man, but the slight bluish tinge of his lips and florid cheeks, pointed to defective venous return. I examined him carefully, found slight edema of lower extremities, heart sounds normal, but very faint. A condition which I have learned by experience results in organic heart disease in a very short time.

I questioned him carefully in regard to his eating and he assured me that no one could be more careful. I gave him *nux vom.* 2x before meals, and *digitalis* two drop doses, between meals, but the improvement was very slight.

Coming up the river I sat near him, and observed that while he carefully abstained from so-called indigestible foods, that what he did take was chewed two or three times and then *bolted* down by muscular force.

When I next saw him I mentioned this habit,

and told him plainly that he would develop organic heart disease unless his food was properly eaten. He has wisely followed the suggestions, with a result that the dropsy has gone and his face assumed a normal color.

Just as an engine and boiler will get clogged up and work inefficiently, if the fuel is not properly burned, so will the human system get clogged up and work badly if the fuel is not properly assimilated. Hence, before I start to load a man up with drugs, I find out if he is giving the digestive juices of his body a fair chance.

I insist most strongly on a man eating at one time and drinking at another. If he takes his food dry, he must perforce chew it thoroughly. If he drinks when his stomach is empty, there is no waste of digestive juices, and the liquid which is not absorbed to meet the liquid needs of the tissues tends to waste away the catarrhal mucus which coats every disordered stomach and intestine.

To remove as far as possible the tendency to thirst at meal time I ask him to drink a glass of hot water, or hot milk and water, one hour before each meal and bed time. To give the saliva a chance to digest the starchy elements of his food I ask him to chew his food so thoroughly that it will slip down his throat without effort.

The constant use of tea and coffee is on the same level with the constant use of alcohol. All admirable stimulants and adjuvants when used occasionally, but creating a craving habit, if constantly taken.

I advise him a good hour's walk daily, and morning and evening a five minutes' easy *séance* with the Goodyear Pocket Gymnasium, manufactured by Mr. Leonard, of Hodgman Brothers, Broadway.

The drugs which I have found were useful are *carbo. veg.* 5x, *pulsatilla* 3x, *mercurius sol.* 3x, *bryonia* 3x, *hepar sulphur* 5x, *sulphur* 6x, *arsenic* 5x, and *cinchona* 3x.

HOW PHYSICIANS PRESCRIBE PEPsin.

BY R. G. ECCLES, M.D., BROOKLYN, N. Y.

Pepsin is probably the most sensitive remedy the physician prescribes. Its range of incompatibles covers very nearly the whole materia medica. There are but few substances that do not in some degree arrest its proteolytic power, and yet it is prescribed frequently in utter disregard of its most glaring antagonisms, and almost constantly without thought of its ruinor inhibitors. Unless one has paid close attention to the subject the best rule to follow is to prescribe it alone or with some substance known not to seriously affect it. Sugar of milk, glycerine, dilute acids or alcoholic solutions, known not to contain over 20 per cent. of alcohol, are the best. Even this small amount of alcohol is slightly deleterious. As a fair illustration of how pepsin is treated by some Brooklyn physicians, the following prescriptions have been taken from the files of a drug store in that city. They represent all those that called for pepsin during the period covered, except such as were repeatedly ordered by the same physician under merely slight modifications. The most flagrant violations of all rules regarding the ad-

ministration of this substance was found in the following from a gentleman in good standing among the profession:

R Pepsinæ Sacch..... 3 i.
Sodæ Bi-Carb..... 3 ss.
M. Ft. Chart, No. xv.
Sig. One every three hours.

Whatever the interest of the prescriber may have been, it is safe to say that that patient derived absolutely no benefit from the drachm of pepsin. He might as well have thrown the money it cost into the ocean. If the prescription did any good it was due to the bicarbonate of soda alone. A single grain of the soda was enough to destroy far more than the amount of pepsin prescribed as effectually as if it had been consumed in a furnace. Again, if there had been no sodium bicarbonate present the quality of pepsin given at a dose was so small that it could at best serve but little better than a placebo. The Pharmacopœia of 1880, following that of an earlier date, called for saccharated pepsin that would digest fifty times its own weight of albumen in six hours, but it did not order the albumen to be comminuted. With finely-ground albumen the same pepsin will, in the same time, digest nearly ten times the amount it could if the albumen was submitted to it in large pieces. The earlier saccharated pepsins being expected to digest fifty times their own weight of lump albumen were therefore nearly ten times stronger than our modern ones. Manufacturers taking advantage of our new method of using finely-ground albumen, claim to supply a U. S. P. saccharated pepsin, when in fact it is nothing of the kind. All it really digests, when truly gauged by the Pharmacopœia, is five times its own weight of non-comminuted albumen. Many will not even do this. As the quantity of liquid in the stomach bears no such large proportion to the meal as the quantity used in pepsin-testing does to the albumen, another source of deception creeps in. The whole drachm of pepsin of this prescription, had it been given at one dose, could have digested a single ounce of meat or half of a small egg. But it was given in fifteen doses, three hours apart. Had each powder been left of full strength it would not have digested a bulk of albuminous food much larger than a cherry, and it would have taken six hours to do that. But the stomach that does not digest a meal in less time than six hours is not in prime condition. The next worst prescription came unsigned, as if the prescriber was himself ashamed of it.

R Sub-Carb. Bismuth..... 3 i.
American Pepsin..... 3 ii.
Bi-Carb. Soda..... 3 i.
Spear-mint Water q.s. ad..... 3 ii.
M. Sig. 3 i every two hours.

Here, again, we have the utter destruction of the pepsin by the bicarbonate of soda. Surely it ought not to take this prescriber long to reach the point where he would turn around and denounce pepsin as useless. If he often serves it this way he can never hope to have good results from its use. Perhaps, however, he credits the pepsin with such good work as happens to be done by the soda or bismuth and hence does not become its enemy. The quantity here ordered is better than the last, and is especially so because he specifies a brand that has in the past ranked above the average. But even here, had the ferment been left in full vigor the quantity was too small to be of any great benefit. The next is scarcely as bad as the two preceding, but does require a great deal of scanning to see wherein it falls short of an ideal prescription:

R Ammon. Carb..... gr. ii.
Tr. Opii Camph..... m xl.
Liq. Pepsin (Hawky)..... 3 i.
Aq. Calcis. q.s. ad..... 3 iii.
M. Sig. 3 i. every two or three hours.

Here we have ammonia carbonate and lime-water enough to more than overcome the acid of the liquid pepsin. All alkaline substances destroy pepsin and therefore the care he took to specify whose pepsin he wanted

was in vain. Lime-water and pepsin should never go together, and the same is true of carbonate of ammonia and pepsin. Why he thus strove to get his compound alkaline is a mystery, if he knew anything about the article he was prescribing. In the next prescription we find a blunder of the same kind made by a different gentleman. Here, However, less lime-water was called for and no ammonia carbonate.

R Aquæ Cinnam..... 3 iss.
Aquæ Calcis..... 3 ss.
Bis. Sub Nit..... 3 ss.
Pulv. Acaciæ..... 3 i.
Pepsini..... gr. xv.
Spr. Vin. Gallici..... 3 iii.
Syr. Prun. Virg. q.s. ad..... 3 iii.

Sig. 3 i every three hours.

Evidently these gentlemen were thinking more of the symptoms they wished to combat than about the chemical relations of the mixtures they were ordering.

The next combination is a rather uncommon one. It was evidently intended, like the bicarbonate of soda prescriptions already given, to overcome acidity of the stomach as well as lack of digestive power. If two sets of powders had been ordered, the one containing the pepsin, the other the magnesia, and these given in rotation a few hours apart, they would have worked admirably:

R Pepsini.
Magnes. Albi..... aa. 3 i.
Ft. Pulv. No. xii.

M. Sig. One powder in water three times a day.

Here the quantity of pepsin in a single dose is five grains, but the quality may be very good or very poor. The druggist can take his choice from any one of the dozens of kinds upon the market. The five grains may be able to digest over twenty thousand grains of comminuted albumen, or it may not be able to digest more than five hundred grains. If the druggist puts in the best it will be forty or fifty times stronger than the poorest. Unless he has tested the different brands himself he has no means of knowing which is the best or which is the poorest. Price is no criterion, for one of the poorest is a high-priced article, and one of the very best sells wholesale at a reasonable rate. Nor can the claims of manufacturers always be relied upon. Usually it is wise to take their florid statements *cum grano salis*.

The next two prescriptions are from the same physician. Usually he is very careful about what he orders with this ferment, but in these cases he touches the verge of danger:

R Sodii Benzoat..... gr. xl.
Potass Bromidi..... 3 iss.
Spts. Ammon. Arom..... 3 vi.
Syr. Scillæ..... 3 vi.
Essence of Pepsin..... 3 vi.
Aquæ ad..... 3 ii.

M. Sig. 3 i every three hours.

R Acid. Phosh. (Horford's).... 3 i.
Pepsin. (Armour's)..... gr. xl.
Spt. Chloroformi..... 3 iii.
Aquæ Camph..... 3 iii.

M. Sig. 3 i after meals in water.

If the druggist, in compounding the first of these should inadvertently add the essence of pepsin before putting in the syrup of squills there would be an instantaneous destruction of the ferment. If the syrup of squills happened to be deficient in acetic acid or the aromatic ammonia had an excess of alkali or alkaline carbonate the same thing would occur. Dispensed of proper strength and in the order given no harm could befall the pepsin from the alkali, but the mixture will contain three salts showing considerable inhibitory power in the proportions ordered. In the second prescription we have the pepsin fortified by the acid phosphate but seriously crippled by chloroform that happens to be a very strong inhibitor of proteolytic power.

(To be continued.)

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ROBERT GUERNSEY, M.D.

ALFRED K. HILLS, M.D.

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Changes of standing advertisements and communications in regard to that department, should be addressed to BENJ. LILLARD, Advertising Manager, 72 William St., N. Y.

QUARANTINE VS. SANITATION.

A MEMORANDUM of unusual interest has lately appeared, defining the attitude of Great Britain towards quarantine, says Dr. W. T. Sedgwick, in the *Boston Medical and Surgical Journal*. England has always held a leading position in sanitary affairs, so that her steady refusal to adopt wholesale quarantine at her sea-ports has naturally excited frequent comment and inquiry. It has seemed very strange to many that the nation having the largest commerce, and therefore most exposed to cholera and other exotic diseases, should be so indifferent, and even opposed, to quarantine. Sanitary officials of the political kind, such as too often exist in this country, have naturally supposed that England's opposition to a mediæval system was based upon merely mercenary motives—these always offering to minds of a certain order an ample explanation of unusual action. Sanitarians, however, have long known that local isolation was the key-note of the English system, together with local sanitation, which should make widespread outbreaks impossible even if exotic diseases like cholera should be imported. To apply a saying of Pettenkofer, the English have regarded unsanitary conditions as a kind of powder for which cholera is a spark; and they have held that it is wiser to keep no powder than to spend their energies in frantic attempts to beat off a spark, which, if it gets in, would be sure to blow them to pieces. Quarantine, and that, too, of a very rigid kind, is employed in England; but it is quarantine of the individual rather than the

mass, a system now generally described by the term "isolation of the patient."

The memorandum referred to was prepared by Dr. Thorne, medical officer to the local government board, and himself a distinguished sanitary authority, in answer to a request of the Foreign Office. In reply, Dr. Thorne states that even in the case of cholera, the public health department of Great Britain recognizes no system of quarantine. He adds: The English cholera regulations do not profess to be so framed as to prevent all chance of the importation of cholera into the country. They aim at detection and arrest of all actual or suspected cholera at our ports and at giving the earliest possible warning to inland authorities as regards particular persons about to arrive in their respective districts. If, in spite of these measures, the disease should be imported, every sanitary authority has the responsibility for the maintenance of conditions which should enable them to deal with imported cholera in such a way as to prevent its extension.

In a recent lecture at St. Bartholomew's Hospital, Dr. Thorne spoke more informally about the English system. He maintained that the rigid quarantine system relied upon by the continental powers would be perfectly ridiculous, and could be attended by nothing but disaster if applied to English ports, and especially to the Thames. Quarantine was also a cruel process, and when attempted on land is essentially and necessarily inefficacious. The following is especially interesting and suggestive:

For England the abandonment of quarantine has been an almost unmixed good. The knowledge that no pretence would be made to keep out all chance of cholera in this country, has done more perhaps than anything else to induce our sanitary authorities to spend their money on great works of sanitation, and on such improved sanitary administration as is likely to prevent the spread of any imported disease of the type of cholera. Millions have been spent to this end; but, on the other hand, hundreds of thousands of lives have been saved. Even if cholera should once more succeed in passing the barrier of our ports and diffusing itself inland and cause a heavy mortality, we should still be enormously the gainers in point of human life by the system which we have so deliberately adopted; but there is no doubt that our system is rather calculated to prevent than to lead to such a contingency.

No one (concludes Dr. Sedgwick) can successfully deny that these principles embody sound

sense as well as a rational application of the best results of modern science to sanitation. In our own country at present there is still altogether too much of leaning upon Federal quarantine. This has its place, but our great cities ought to understand that their first and principal business is to set their own houses in order, to see that their own sanitary affairs are in intelligent hands, and, especially, that their public food supplies, such as milk, ice and water are free from all taint of sewerage. Efficient local sanitation and isolation—not so much wholesale, by quarantine, but for each particular case—these are the plain teachings of modern science as well as of common sense.

PRURIENT MORALITY AND SENILE DEGENERATION

AN entirely original view (as it appears to us) of a very important subject, is that taken by Dr. DeWitt Webb, in a recent contribution to the *Virginia Medical Monthly*. The writer's purpose, as expressed by himself, is to deal with "*the mischief which comes from a thinking, and a consequent utterance, the result of senile degeneration in the nerve centres, which often passes for the inspiration that comes from the highest morality.*" He speaks of morality "in the narrow sense in which it is so often used by the English speaking world, viz., the proper relation between men and women.

"It is easy to understand how, through the age of maturity for both men and women, when all the powers are in full balance and accord, when passion is tempered by regard, by comradeship, by a community of interests in pleasure and pursuits, when its object is glorified, and when, indeed, for the greater number of the youthful associates, there is for him or her little or no passion, the relations of the young may be comparatively free and yet correct, because of proper self-control and self-respect, and respect for one another. This is the healthy and normal condition of adult men and women.

"As years go on, the change which comes with the passing of time takes place, and to many the change of approaching senile degeneration comes early, and shows itself as surely, although not so often recognized, as in the foul thinking of immaturity. The mother's instinct tells her that her daughter is safe with her companion of twenty, but the same mother would make very careful inquiry if the escort was past middle age.

"The subject under consideration receives its importance, not so much from its consequences

to the individual, as from its effect upon society,

because the kind of thinking, the result of nerve degeneration, is given to the world, and by a large number accepted as proceeding from a deliberate and carefully formed judgment.

To these mentors, the dance is only a field for the exercise of unlawful desire, and but for the good sense of the young people themselves, and the healthy instincts of the mothers of the girls, a great part of the pleasure of young society would be destroyed. For it must be remembered that a great part of the plea of these moralists goes on the assumption that the girl lives among the young men, her companions, surrounded by an atmosphere of unlawful desire, uncontrolled in them by any sentiment of either, honor or comradeship. Of course, to such a man the dance is simply an invention of the Evil One, and all gatherings of young people but so many opportunities for sin.

"Now, all this will fall harmless on our ears if we will but remember that such a man has forgotten his youth; that instead of his sayings being the result of a ripened judgment, they are rather the evidence of a premature change in nerve tissue, for which his own life in the past may or may not be responsible, but which should lead us to give little weight to whatever he may have to say. . . . The trouble is that the vaporings of a diseased brain pass for sound moral teaching, and many people are made miserable and think they are doing wrong when they should feel like resenting an insult to their good sense. . . . Healthy thinking can only come from healthy living, and so very much that has passed and is passing to-day as proper moral teaching, is only the result of a diseased state, and therefore very far from the truth.

"The very first consideration for those who look for the physical advancement and better health of mankind, is a clearer understanding of the proper relations of men and women. Can it be doubted that the class whose voice should be listened to as speaking with authority is that of the doctors, rather than of the professed moralists, who for so long have held the ear of the world, often teaching for doctrine the commandments of very one-sided men? . . . The priests in the new world must be the men and women of the medical profession, for they will teach a physiological basis of the one phase of morals which belongs to their sphere of life. . . . They will preach not repression and retreat, but self-control and victory. Young men and young

women shall learn from the doctor what they have not been able to learn from the priest, viz.: that in amusements and business, it is possible to have a becoming freedom of manners without loss of self-control or self respect.

"The French novel we rightly call vile, is the product, not of the young brain, but of the old brain already degenerating, and the progressing vileness of the succeeding volumes may in most instances be marked by the advancing years of the writer. It is the same trouble taking another form; but we are careful that the immature shall be kept, if possible, from this kind of literature.

"I think we ought also to guard our immature young from those who would accentuate sex. To these moralists a woman is always 'one of the opposite sex.' Their thinking has corrupted even their power of proper expression. It does not help matters that the object of their writing may be good.

"Tolstoi is a great genius and an ornament to literature and to humanity, yet his 'Kreutzer Sonata' is a vile as well as a very stupid book, utterly unworthy of the writer, and one it would have been impossible for him to write in his earlier days. The very writing of such a book is, to my mind, an evidence of nerve degeneration. So when a professed moralist shows by his writings that he has an unclean imagination, the result of ageing, let his writings pass at their real value and nobody will be harmed. On the other hand, if these utterances are taken as the expression of matured wisdom, then great harm comes.*

"Is it too much to ask of our fraternity that in so far as in them lies, they shall aid in bringing society into a more natural state of thought and behavior? As nobody knows so well as our own profession the full force of all the great instincts that are fundamental to society, so no others know so well how strong a healthy self-restraint can make men and women; or how silly is that teaching which seeks to hide a passion from its possessor, so that when it is once awakened it shall defy restraint and end in destruction.

"This is not a lecture on morals. I simply wish to show that as physicians we believe that a right education makes it possible to have right thinking, and in this thinking neither the immaturity of youth or senile degeneration has any place. The one is just as fatal to right under-

standing as the other. It does not matter that it has passed for many centuries as the teachings of the accumulative wisdom of the ages, it is none the less pernicious and false. Its tendency is inevitable to lead the young man away from his natural and higher thoughts toward his gentle companion, and to teach him that his regard is but lust for her person; and on the part of the young woman, to lead her to think that her pleasure in her companion's society is a sin, and that she is surrounded by a circle of young men to whom her presence is, at all times, only a temptation, intensified by her every adornment and grace.

"In conclusion, I would only say that while our profession is not held responsible as a teacher of morals, yet it is quite within our sphere to impart that instruction which comes from a knowledge of physiology and pathology, and so, in fact, to place on a sound and substantial basis, some of the conduct which comes within one phase of morals of daily life.

"It is a strange thing that age should pass from a higher to a lower form of thought, and yet the bald-headed front row of the ballet is matched by the moralist who cannot see in the natural companionship of young men and women anything but the gratification of unlawful desire. To his mind there seems to be no such thing as self-control. His consciousness that his own thoughts run entirely on the lower plane is to him sufficient evidence that all others are like his own. He excepts 'physicians and artists,' because common decency compels him to—often, I believe with a mental reservation, but he puts all other men on his own level.

"If it is true that 'physicians and artists' only can lead lives of clean thinking, then it is high time we started to lift the remainder of mankind to as high a level as our own, by giving them the plain teachings of the scientific basis of these phases of morals."

A NEW DISINFECTANT.

THE well-known action of electricity upon the oxygen of the atmosphere in producing ozone is the key note of the new process of Mr. Albert E. Woolf, an electrical engineer and inventor, for furnishing at a very slight expense one of the most effective disinfectants upon a large scale ever yet produced. This process has been utilized at Brewsters, a village in the Croton water shed, where the sewerage of the village drained into a

* May not Dr. Brown-Sequard's case be another, illustrating how this trouble affects men of science?

swamp and from thence percolated into one of the streams forming the Croton water supply. At this point a plant has been erected, consisting of a dynamo capable of furnishing seven hundred amperes at a potential of five volts, driven by a fifteen horse power engine. At the bottom of the electrolyzing tank, which holds a thousand gallons of sea water and is fed by a three thousand gallon storage tank of sea water at a little higher elevation, are placed the electrodes. There are three platinum plates and four carbon, the positive and negative plates alternating. The salt water when properly electrolyzed, by a simple arrangement overflows into a pipe leading directly to the sewer. The process of changing the infectious matter, into non-infectious is produced, according to the opinion of Mr. Woolf, in which Mr. Martin, the chemist of the Health Department concurs, by the action of the current of electricity as it passes through the sea-water, converting the chlorides, bromides and other salts into hypochlorides, hypobromides, etc. When a solution of hypochloride of sodium is brought in contact with organic matter, a decomposition at once takes place. Part of the chlorine in the hypochloride replaces a part or the whole of the hydrogen in the organic substance. Another portion unites with the liberated hydrogen and bleaching ozone is produced, which in its turn acts on the organic matter. In other words, the organic material, be it organized as in the lower forms of vegetable life (bacteria, etc.), or non-organized, as in the solid or suspended matter of sewerage, is decomposed, and if sufficient hypochlorides are present the organic matter is permanently disinfected.

The disinfectant is so easily produced that Dr. Edson estimates that one hundred and forty gallons cost less than one gallon of a one per cent. solution of chloride of lime, and more than three hundred times less than a five per cent. solution of carbolic acid. From a detailed report of Mr. Wilton G. Berry, one of the chemists of the Health Department, it is shown that about twenty drops of the electrozone to a gallon of Croton water gave entirely satisfactory results, the water being purified without having the slightest taste of chlorine. As this rate 24,000 gallons of electrozone would be required to treat 30,000,000 gallons of Croton water. Mr. Berry's test also showed that the electrozone in such proportions had no deleterious effect upon fish life. If on further experiment it is proved that the bacteria are actually destroyed, the mayor will have the machine put at every water distributing point in the city.

TYPHOID FEVER DIAGNOSIS.

DR. Baruch says in the *New York Medical Journal*, that in his hospital and general practice as soon as a patient shows a rectal temperature in the morning of 102° and 103° in the evening for three successive days, especially if accompanied with a headache, dullness or apathy, he is placed in a full bath of 90° , which is reduced to 80° , with constant friction. In three hours, the temperature still being above 102.5° , he receives another bath five degrees cooler. This is repeated until the temperature of the bath is 75° . If one or more of these baths fail to reduce the temperature two degrees in half an hour, the diagnosis of typhoid fever is almost certain and the bath treatment is continued. The point emphasized by Dr. Baruch is that the resistance of the rectal temperature to a bath of 75° for fifteen minutes with friction is an almost certain test of typhoid fever. Dr. Schnell in the same journal says that he thinks in the treatment of typhoid the early and thorough irrigation of the colon, a proper dietary and a copious internal and external use of water are more reliable than the employment of drugs.

SOME RESULTS OF FAITH CURE.

THE reports from a recent faith cure convention, says the *Boston Medical and Surgical Journal*, have some curious and interesting statistics. Out of two hundred cures reported thirty patients had made a diagnosis of organic disease; and there were the usual number of fractures which had been marvellously reunited by faith. There was no record made, however, as to the subsequent position and deformity. The time of this method of cure appears to be much shorter than that required by surgical means—as a broken ankle was said to have been cured in five minutes.

The greatest curative effect of faith seemed to be upon erysipelas, for one hundred cases of speedy cure were reported. In what way the streptococcus is affected by a profession was not clearly explained.

The only case not curable by this means appeared to be rupture of the heart; for one person testified that by faith his child had been cured of colic, and a daughter of pneumonia. Their little one had been taken from them, but not by sickness; he died of a broken heart.

The further gathering of figures and the compilation of mortality statistics should not be neglected; for their results are curious and of some physiological interest.

"LIFE FROM THE CELL"

AT the recent meeting of the British Association for the Advancement of Science, the principal subject of discussion was the latest news about the great secret of life, and the address of the President, Prof. Burdon Sanderson, was chiefly devoted to that topic. Says the correspondent of the *Sun*: "He deliberately destroys the work and conclusions of the investigators of the past few years. It has been asserted for some time that the mystery was on the eve of solution. The discovery of the cellular principle of all life led to the conclusion that the secret itself was about to be disclosed. Eminent biologists have asserted in recent years that a chemist would soon be able to compose the necessary parts and conditions of living things in the laboratory and create life. If successful, the mechanical theory of life would stand proven."

"Prof. Sanderson dashes all our hopes. He says:

"The process of lymphatic absorption, which before we regarded as dependent on purely mechanical causes, is in great measure due to the specific energy of cells, and in the various processes of secretion the principal part is not, as we were inclined not many years ago to believe, attributable to liquid diffusion, but to the same agency."

"In other words, the phrase, 'the specific energy of cells,' takes the place of the mysterious 'vital principle' of the alchemist of the Middle Ages. While making this depressing confession, Prof. Sanderson does not discourage unflagging pursuit of the secrets of nature, although he does not hold out hope of the solution of her greatest mystery."

GROWING PAINS.

THE subject of the so-called growing pains has been investigated by Karewski, of Berlin, who finds that in the majority of cases they are due to causes which are not connected with the process of growth (*Boston Med. and Surg. Jour.*)

In the first place he points out that, as a rule, the pains are not seated in the bones, but about the muscles, and are quite similar to those of slight pyretic attacks of rheumatism. All such cases should be referred to their proper cause.

There are, however, a certain number of cases in which there is a mild increase of temperature and more or less dull aching pain about the long bones. It is found that these occur in children

who have been growing tall at an undue rate. Karewski thinks it possible that the active bodily exercise at this period of life has given irritation in some way to the epiphyseal lines of the long bones, which naturally results in rapid proliferation and growth. When this condition is too marked, there is a mild inflammatory action, with pain and abnormally rapid growth; consequently he concludes that children have pain and fever, not because they are growing too fast, because they are really ill.

He apparently takes no notice of the frequent onset of these pains shortly before school-time, and their relation to pleasurable or dutiful exertions. In America, certainly, this factor plays some part in the cause of growing pains.

MR. HENRY L. SLOTE, one of the trustees of the Middletown State Hospital of the Insane, writes us of his visit to the St. Lawrence State Hospital at Ogdensburg, on the occasion of the sixth annual meeting of the Association of Managers and Medical Superintendents of State Insane Hospitals. The meeting was well attended, and of marked interest. The buildings are being constructed under the direction of the architect, Mr. Perry of Albany, and the plant, in the estimation of Mr. Slote, will, when completed, far exceed any hospital for the insane in this country, or the world. The view from Point Perry up and down the river is one of unsurpassed beauty. On his return, through the courtesy of Dr. Blumer, Mr. Slote visited the Utica Asylum, and was very much gratified at the evidence of excellent law and good management in that institution. The annual meeting of the Association cannot fail of being productive of good to patients and officers.

SOME idea can be formed of the popularity of triturate tablets from the fact that the sale of a single manufactory, Luytes & Co., St. Louis, has increased from 500,000 a day two years ago, to over a million a day this year. These include, as does the manufactory of Fraser & Co. of this city, and Boerke & Tafel, single remedies and combinations and are used by all schools. Luytes & Co. have manufactured an elegant oak case thirty-three inches high, seven inches deep and twenty-three inches wide, with glass doors, holding one hundred four-oz. bottles of one thousand tablets each. This case is furnished free to any one purchasing fifty dollars' worth of goods at regular wholesale physician's list rates.

WE would like to call the attention of the profession to the sanitarium for ladies recently established at Atlantic City by Dr. Garside, formerly one of the most eminent physicians in Brooklyn. Dr. Garside, in retiring from private practice has brought to his aid in his own beautiful home all the modern appliances of a well regulated sanitarium, where in a home atmosphere and amid cheerful surroundings, in a most salubrious climate, the invalid can enjoy all the comforts of a luxurious home, and be under the constant care of a physician whose skill and long years of experience will be utilized for his benefit.

IMMUNITY TO CHOLERA.—By treatment with subcutaneous inoculations of cultures of cholera bacilli, G. Klemperer, *Berl. Klin. Wochenschr.*, 1892, No. 39, p. 969, has succeeded in conferring upon man immunity to cholera, as indicated by the protective influence of the blood-serum of the immune individual upon guinea-pigs, in a degree proportionate to the virulence of the protective inoculation. He was also able to demonstrate that some persons possess a natural immunity to cholera—much less in degree, however, than the immunity artificially conferred.

SUCROL.—This is the commercial name given to parahenetol-carbamide, a body which is easily produced by adding a solution of potassium cyanate to muriate of amidophenol. The properties of sucrol have been experimentally investigated by Dr. Heinrich Paschkis, *Therap. Blatter*, Vienna, March 26, 1893, who arrives at the following conclusions:

Sucrol is a condiment which has an agreeable and intensely pure sweet taste. As it does not produce any disturbances in the human and animal organism, and represents chemically a substance of rare stability, nothing can be said against its use as a sweetening condiment.

Sucrol cannot replace sugar as a nutrient; for the latter gives to the food a certain consistency, due to the comparatively large quantity to be used for the purpose of nutrition; this can never be obtained by sucrol.

—The Homœopathic Medical Society of the State of New York will hold its semi-annual meeting at the Clark mansion, Alexander Street, Rochester, on Tuesday and Wednesday, October 3d and 4th. The membership of the State Society is said by the secretary to be 450 out of the more than 1200 Homœopathic practitioners in the state. Of this number probably less than one-quarter ever attend the meetings of the Society or take any particular interest in its proceedings.

BIBLIOGRAPHICAL.

About October 15th a Medical Directory of the State of Connecticut will be issued by the Danbury Medical Printing Co., of Danbury, Conn. It will contain a list of all the medical practitioners of the State, the various medical societies, all the dentists and dental societies, druggist and pharmaceutical societies, nurses and training schools for nurses, hospitals, etc. Price \$1.00, delivered free by post.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. A yearly report of the progress of the general sciences throughout the world. Edited by Charles S. Sarjous, M. D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with chromo-lithographs, engravings and maps. In five volumes, 1893: The F. A. Davis Publishing Co.

The sixth series of this comprehensive manual is fully up to its previous standard. As the work simply condenses and puts in connected form the researches and experience gleaned from journals, books and monographs, considered of such practical worth as to be worthy of preservation in the chain of progress, its great value of course, as a work of reference, depends on the activity of scientific minds throughout the world, as mirrored in medical, literary and general scientific journals, books and monographs. We find included in the authorities quoted in the annals of this year 1,096 journals and 1,098 books, thesis, monographs, etc. This includes books and journals of all schools which have a bearing upon medical thoughts and sanitary progress.

OUTLINES OF PRACTICAL HYGIENE. Adapted to American conditions. By C. Gilman Currier, M. D., Visiting Physician to the New York City Hospitals; Fellow of the New York Academy of Medicine; Member of the New York Pathological Society; Member of the American Medical Association, etc., etc. One large octavo volume, 468 pages, illustrated, \$2.75. New York: E. B. Treat, Publisher.

Any information upon the prevention of disease, always welcome to the profession, when given in the plain, practical manner of this work, will be eagerly studied by the public. A glance at the contents will show the scope of the work, every subject of which is discussed with marked intelligence and scientific accuracy:

Soil; climate; protection of body; clothing; bathing; personal hygiene; physical exercises; schools; occupations, their influence on health; heating; lighting; buildings; ventilation; diet; foods, their preparation and adaptation; water and water supplies; fluid waste; sewers; drainage; plumbing; garbage and other refuse; disposal of the dead; human excreta, disposal of; bacteria and disease; infectious diseases; disinfection; restriction; communicable diseases.

A MANUAL FOR BOARDS OF HEALTH AND HEALTH OFFICERS. By Lewis Balch, M. D., Ph. D., Secretary State Board of Health of New York; Health Officer of Albany; Emeritus Professor of Anatomy and Professor of Medical Jurisprudence, Albany Medical College. Banks & Brothers, Albany, N. Y. Price \$1.50; delivered upon receipt of price.

The Secretary of the State Board of Health, Dr. Lewis Balch, has prepared a manual for the use of local Boards of Health, Health Officers and all others interested in health matters. The book is precisely what it purports to be, a practical working manual. It defines the powers of the State and local boards, it contains directions to the local Health Officer; it gives examples of problems which may arise and their solution; it offers suggestions for the prevention of disease and it includes directions to be followed in times of danger from epidemics of contagious diseases, which formulate the best method of stamping these out which experience has devised. It solves many

legal questions in the most plain and practical way. The value of the vital statistics gathered by the State Board is explained, and the duty of those who are required by the law to fill out the certificates is fully defined. Blank certificates, having the questions properly filled out, are given as models to be followed. Bound with the manual is a copy of the Public Health Law to which it is designed to serve as a commentary. The volume will be found to be of the greatest value to all who are interested in the public health, and it will enable Boards of Health and Health Officers to be certain of their position in their dealings, either with their municipal governments or with the people.

A NEW ILLUSTRATED DICTIONARY OF MEDICINE, BIOLOGY, AND COLLATERAL SCIENCES. P. Blakeston, Son & Co.

The feature that will attract immediate attention is the large number of fine illustrations that have been included, many of which—as, for instance, the series of over fifty of the bacteria—have been drawn and engraved especially for the work. Every scientific-minded physician will also be glad to have defined several thousand commonly used terms in biology, chemistry, etc.

The chief point, however, upon which the editor relies for the success of his book is the unique epitomization of old and new knowledge. The pronunciation, etymology, definition, illustration, and logical groupings of each word are given. It is especially rich in tabular matter, a method of presentation that focuses, as it were, a whole subject so as to be understood at a glance.

The latest method of spelling certain terms, as adopted by various scientific bodies and authorities, have all been included, as well as those words classed as obsolete by some editors, but still used largely in the literature of today, and the omission of which in any work aiming to be complete would make it unreliable as an exhaustive work of reference.

The publishers announce that, notwithstanding the large outlay necessary to its production on such an elaborate plan, the price will be no higher than that of the usual medical text-book.

CORRESPONDENCE.

To the Editors of the NEW YORK MEDICAL TIMES:

The following occurs in that unequalled depository of undesigned facetiae—the *Medical Century*—latest issue:

"An emphatic trend in any one family from generation to generation makes history for time-honored creeds. In the annals of medicine the years have accrued a certain loyal Homœopathic ring to numerous family names whose representatives are representative Homœopathic physicians as well. . . . Good, strong, effective names, carrying with them the suggestion of undertaking and accomplishment and testifying, everyone of them, to the resource and desirability of Homœopathy. For it means something when fathers and grandfathers and sons and brothers adopt one and the same trade. There has been, and is, and must be a deal of success somewhere in the clan, else the rest would keep out of it."

If the practice of Homœopathy be indeed what this writer calls it—a *trade*—I can discern no reason for his crowing so loudly over the fact that it is frequently handed down from father to son, like any other lucrative and desirable occupation. But when two joint inheritors of a name standing among the very foremost in this "trade," instead of profiting by the advantages it gives them and keeping up the business under the old sign—as in the illustrious instances above alluded to—deliberately forsake the paternal *métier*, choosing rather to join the ranks of a *profession*, where they will have to work their own way up—are they not entitled to our respect and admiration? Can we fancy CARROL DUNHAM himself looking down

with disapproval upon such a manifestation of that unswerving fidelity to convictions of truth which was his strongest moral characteristic?

Some Homœopathic journals, I notice, engage in a good deal of exultation because subscriptions for the Hahnemann statue at Washington are pouring in rapidly, while scarcely any interest can be aroused in the dominant profession concerning a similar memorial to Dr. Rush. It seems to me that in this matter any such feeling is entirely uncalled for, and no invidious comparison is justifiable. Both these men, let us grant, would be suitably honored in the manner proposed; yet, in all probability, only one of them will secure the distinction, and that one a foreigner, whose achievements have no special relation to our national interests, while his professional admirers are outnumbered ten to one by those of the American physician and patriot. How is this to be accounted for? A little reflection will supply the answer. *A colossal statue of Hahnemann, in enduring bronze, appropriately inscribed and conspicuously erected at the national capital, will constitute the most magnificent and effective advertisement imaginable, not only of Homœopathy, but of each and every Homœopathic practitioner in the land; while the effigy of Benjamin Rush would profit no one and reflect glory only on himself and his descendants.*

GEO. L. FREEMAN.

To the Editors of the NEW YORK MEDICAL TIMES:

Permit me to call your attention to the new coal tar production, *i. e.*, pyreline, or chemically known as, a definite chemical substance from the benzene or aromatic series of hydro-carbons, as its molecule shows; having no depressive action on the cardiac system, therefore safe to administer.

Solubility, sparingly soluble in cold, more so in hot water, freely soluble in alcohol and ether, insoluble in glycerine, oils, etc.

This drug possesses many advantages over other antipyretics, since it reduces a febrile temperature without at the same time reducing muscular strength, and especially that of the heart, or interfering with any function necessary for the support of the patient—first of all, the digestion.

Pyreline, since it fulfils these indications, may be considered therapeutic in the true sense of the word.

One of the most important features of this remedy is the absence of any nervous or cardiac depression, even after liberal use, a condition which follows the exhibition of most medicines of this class. Its anodyne properties are more decided than those of any antipyretic now in use. It is, therefore, well adapted for the treatment of painful nervous diseases, such as neuralgia, nervous headaches, hysteria, and kindred disorders, as also of reflex and general nervous derangement; its efficacy in this class of cases is now fully established.

Unlike many remedies, it does not cause lassitude or other debilitating and disagreeable symptoms; it therefore promises to be an important remedy in many hysteric, neuralgic and other painful disorders—its action in such cases being prompt and decisive.

The dose is smaller than that of most antipyretics, which is one feature that commands attention. When given in two or three grain doses it may be repeated at intervals of one hour for six to ten hours, or the same dose for a less number of hours repeated every half hour. Larger doses, when indicated, may be given less frequently—for instance, five grain doses at one or two hour intervals.

From thirty to forty grains may be given, if desired, safely every twenty-four hours, although clinical experience has proven that small doses repeated at more frequent intervals will produce better results.

I shall gladly look for more extensive reports in the columns of the MEDICAL TIMES in the near future, believing that this drug has other uses which I have been unable to determine at present writing.

G. T. HUNTER, M.D.

TRANSLATIONS, GLEANINGS, Etc.

RETROSPECTIVE DIETETICS.

BY ALFRED K. HILLS, M.D.,

Fellow of the Academy of Medicine, New York.

Dietetic Value of Pineapple-Juice.—(*Dietetic and Hygienic Gazette*, August, 1892). Some time ago the late Dr. V. Marcano, of Venezuela, noted, (*Medical Age*) that pineapple-juice contained a proteid-digesting substance. Recently, Professor R. H. Chittenden, assisted by E. P. Joslin and F. S. Mears, have investigated the matter fully, and announce facts which are likely to give to the succulent pineapple a prominent place in dietetics.

Pineapple-juice is an acid fluid, of specific gravity of 1.043. An ordinary pineapple yields 600 to 800 cubic centimetres of it. The proteid-digesting power is quite remarkable in its intensity. Three ounces of the juice will dissolve ten or fifteen grains of dried albumen in four hours. The action takes place in acid, neutral, or even alkaline media, thus resembling trypsin more than pepsin. It acts best in neutral solutions. The pineapple-juice contains also a milk curdling ferment. A well known meat-powder is prepared, or is said to be prepared, with the help of pineapple-juice.

Diet in Rheumatism.—In the early stages of the disease, says the *Medical and Surgical Reporter*, it is not difficult, as a rule, to restrict the patient to a suitable diet, as the difficulty usually is to get them to take enough nourishment, but during convalescence, and when the appetite begins to return, then it is difficult to make a patient believe that a good supply of butcher's meat will retard his progress toward recovery. But as a matter of fact, those of us who have had much experience with rheumatism know that a return to solid food, and more especially the giving of meat too soon, is most likely to be followed by a relapse, because in acute rheumatism the system is loaded with waste products, the result of imperfect assimilation, and the digestive functions are seriously impaired. So long, therefore, as the symptoms are acute, small quantities of milk with some alkaline water, such as soda or lime water, should form the main part of the diet; besides these a little beef tea, chicken tea, or mutton broth may be added. As the temperature falls and the acute symptoms subside, vegetable soups, bread, and other starchy foods may be gradually added to the list; gruels, malted foods, arrowroot, rice, and yolk of an egg beaten up with milk and a small quantity of brandy. As convalescence progresses, fish, oysters, and chicken may be allowed once daily. The above line of diet should be strictly adhered to until all symptoms of rheumatism have entirely disappeared. As a rule, ales, wines, and the stronger alcoholic liquids are objectionable, except where the action of the heart is feeble, or in the later stage of the disease.

The Banana.—The banana is a useful and popular article of diet, but should not be used by those who live mainly on starchy foods. Though differing greatly in flavor, the chemical constituents of banana and potato are almost identical, being as follows:

	Banana.	Potato.
Water.....	75.71	75.77
Albuminoids.....	1.71	1.79
Carbonaceous matter.....	20.13	20.72
Woody fibre.....	1.74	.75
Ash.....	.71	.97

This fruit may be used sparingly as replacing other starchy foods, and as it contains such a small percentage of albuminoids it is an excellent and wholesome addition to a diet rich in nitrogen, meat, etc.

Milk as Food.—Sir Henry Thompson says: "Milk is a peculiarly nutritive fluid adapted for the fast growing and fattening young mammal—admirable for such, for our small children, also serviceable for those whose muscular exertion is great, and when it agrees with the stomach, for those who cannot take meat. For us who have long

achieved our full growth, and can thrive on solid fare, it is altogether superfluous, and mostly mischievous as a drink."

Infant Feeding.—A very important thing, says a writer in the *Medical Era*, is the way the milk goes down into the child's stomach. The bottles are so constructed that the milk goes down too fast. Every child who sucks at the breast has to work for what it gets. One of the great troubles in artificial feeding is the milk is cascaded into the stomach and immediately cascaded back again. Most of the sick babies are made so by some prepared stuff being cascaded into their stomachs in enormous quantities. Quantity is a great element in these disorders. I generally tell the mother to put a piece of pure, clean sponge into the nipple, so that the child must work with its gums and lips to draw the milk, and thus obviate the too rapid flow.

Commercial Liquid Malt Extracts.—Dr. Henry Leffmann (*Med. News*, Jan. 29, 1893) has recently examined a number of liquid malt extracts. The solid or semi-fluid extracts are rich in diastase, which is entirely absent in the fluid or so called diastatic malt extracts, which with a single exception to the rule, contain alcohol, and some also contain a very objectionable ingredient, salicylic acid. In other words, liquid malt extracts are mostly beers, and poor beers at that, without food or digestive value.

The Great Enemies of Man.—The change in the conception of tuberculosis, produced by a discovery of its true cause, calls for a re-construction of many of the heretofore approved statistics of mortality, says the *Medical Record*:

It is not very long ago since text-books stated that tuberculosis, meaning especially pulmonary consumption, affected most often persons between the ages of fifteen and thirty years. The tubercular infection is now known to be most frequent as a cause of death in infancy. At this time it is the mesenteric and other lymph-glands and the meninges that are involved; in childhood the bones are prone to be attacked, in adult life the lungs.

Taking tuberculosis in every form as a cause of death, Professor Hugo Holsti, of the University of Helsingfors, has compiled interesting facts showing the relation of age to this disease.

During the years 1882-1889 there died in the Swede-Finnish district of Helsingfors 1,771 persons, of tuberculous diseases. The mortality rate of 10,000 living persons is much the greatest during the first two years of life (2.5 per cent.). It rapidly falls until between the ages of six and fifteen it hardly exists (about .15 per cent.). It then steadily rises until the decades thirty-one to forty, forty-one to fifty and fifty-one to sixty, where it remains at about .6 per cent. and then falls again.

Males are more subject than females in the proportion of 990 to 781, but this holds true more for adult than infant life.

Prof. Holsti's tables show in a striking way identity of the period of greatest mortality from tuberculosis with the time when children are fed on milk.

May it not be that after all the cow is the greatest enemy of mankind, and that without the cow there would be no tuberculosis? The history of Japan, which is a cowless country, favors in a measure this view. Science seems to be pointing toward the conclusion that there are two great and potent poisons constantly infused among civilized people, and these are milk and water. Not that these substances are essentially bad, but that they are accidentally so. It is not proposed to abolish, but to purify them,

RETROSPECTIVE THERAPEUTICS.

Citric Acid in Epistaxis.—Dr. G. W. Hunt writes to the *Medical World*: "I was recently called to a case of epistaxis, in an adjoining town. The hemorrhage had been continuous for three or four hours from one nostril. The man, whose age was sixty-seven, had lost a large amount of blood, estimated quantity three pints. He was pale and faint. I immediately syringed out the nasal cavity with warm water, and injected two drachms of lemon

juice, holding it there about one-half minute, then it was allowed to run out. I then repeated the injection. The bleeding stopped immediately and did not return. Before this remedy was tried the patient's feet had been put into hot water, cold water, and ice applied, and under the direction of a physician various astringents applied to the nasal cavity. In view of the prompt effect of this remedy in this case, I shall try it again, and commend it for trial to other physicians.

Lemons and Cholera.—The Imperial Health Office at Berlin has published an article stating that the comma-bacillus is destroyed in a few hours by being placed upon the cut surface of a lemon or an orange, and that upon the external skin of these fruits they die in from one to two days. Consequently there will be no restriction upon the sale of these fruits, even if they are brought from places that are infected with cholera.

Cineraria Maritima in the Treatment of Cataract.—Dr. E. B. Wenner reports (*Times and Register*) a case of cataract causing total blindness in an aged person, under treatment with cineraria, with very encouraging results at the time of writing. Two drops were instilled into the eye three times daily. About two weeks after commencement the patient began to notice the difference between light and darkness; one week later she could distinguish the hand, when placed between her eyes and the window; subsequently she became able to distinguish the movements of the fingers before her eyes. The doctor was continuing the treatment with hopes of entirely removing the opacity.

The Great Therapeutic Influence of the Size of the Doses.—(*Gaceta Médico-Farmacéutica*, New York, November, 1892). By A. M. Fernandez de Ybarra.

In a somewhat peculiar but well-written and sound contribution to our knowledge of therapeutics, the author treats of the above subject. He contends that there are several other important factors, besides the selection of the medicine to be given, which practitioners should bear in mind in treating their patients, principally among them the size of the dose and the investigation of the origin and preparation of drugs giving practical examples. We get firmly rooted into our heads, for instance, the idea that ipecac is an emetic, and never think of employing it to soothe gastric irritation, which can be done by simply administering it in minute doses; the same is true of tartar emetic, which in doses of from one-sixteenth to one-sixth of a grain is an expectorant and diaphoretic. We consider it an axiom that aloes is cathartic, rhubarb purgative, digitalis a heart tonic, sweet spirit of nitre a diuretic, and Fowler's solution of arsenic an irritant poison to be used only when the direct effects of arsenic are desired, yet aloes and rhubarb are valuable tonics in very small doses, digitalis in a large dose is an emeto-cathartic, sweet spirit of nitre an excellent diaphoretic, and Fowler's solution an anodyne of the irritated gastric mucous membrane when given in very minute doses.

Other points on which the author rightly dwells as worthy of particular attention are: the modifications produced in the system by a prolonged change of climate, the temperament, sex and age of patients, and the time at which the medicine is given.

The same article was written by the author in English, and published in the *New York Medical Record*, April 15, 1893.

Petroleum in the Treatment of Diphtheritic Angina.—O. Larcher, Paris (*Bulletin de L'Académie Royale de Médecine Belgique*, February 27, 1892) recommends highly the use of crude petroleum in faucial diphtheria. Of forty-two cases in which he employed the remedy only two died. One of these was moribund when first seen, and in the other case the parents did not follow directions. Of the remaining forty cases one was sixty-five years old; one twenty-seven, one eighteen months and the rest between three and fifteen years. The treatment consisted in gargles or applications, or both alternately. In only two cases was the treatment restricted solely to the petroleum. But in all cases there was a rapid diminution of the false membranes, a separation of the edges and a

profuse secretion which favored their separation. When thrown off they were immediately reproduced, but much thinner and smaller. The swelling of the glands diminished rapidly as the membranes decreased. Towards the end of the third day of the use of petroleum an erythema appeared on the front of the neck and remained as long as the treatment continued. In only seven cases did paralysis of the soft palate occur. He sums up his conclusion as follows:

(1) Crude petroleum alone is sufficient to ensure cure of faucial diphtheria. (2) Its use is free from all serious objection. (3) It does not interfere with the use of other remedies.

Bees and Rheumatism.—Some two years ago an Austrian physician advanced the remarkable theory that persons who have been stung by bees enjoy an immunity from the effects of bee stings for varying periods, and that, moreover, the virus of the bee sting is an infallible remedy for acute rheumatism. The latter part of the theory, according to the Mediterranean naturalist, has received unquestionable confirmation from a custom of the country people in Malta. Bees are plenty in the island, and bee stings are in such repute as a cure for rheumatism that resort to this primitive method of inoculation has been a common practice in severe cases for generations, the results having been most satisfactory to the patients.

The Surgical and Medico-pedagogic Treatment of Idiotic and Undeveloped Children.—*Academy of Medicine, Paris.* Session June 20th, Bourneville.

—In 1878, Dr. Fuller (of Montreal) performed the operation of craniectomy, doubtless for the first time, upon an idiotic child, with the view of giving expansion to the brain. Twelve years thereafter, in a communication made upon a case of premature synostosis, M. Gueniot submitted the idea that an operation would be useful in analogous cases. On the 9th of May, 1890, Professor Lannelongue performed his first operation upon a little girl of four years, and reported the first results obtained by him in a communication to the Academy of Sciences. His object in having recourse to this operation was the same as that pursued by Dr. Fuller, viz., to facilitate the expansion of the brain, and as a consequence, the development of the intellectual faculties. M. Lannelongue's first communication has been followed by other memoirs, in which he has completed his experiences, and given a résumé of his operations and their modes of procedure. He says: "The operative results have been as follows, twenty-four cures, requiring ten days to effect them; one death at the end of eight hours. The youngest of the patients, a boy of eight months, and the oldest 12½ years. The operations were upon thirteen boys and twelve girls. I speak only of definite results. This should be so, and it is encouraging to be able to report the operations as being entirely successful, indeed it must not be forgotten that we look for no other result. This purpose may be thus stated, viz., to restore those unfortunate, who otherwise would be doomed to a miserable existence, and to enjoy the thought of suddenly regenerating and transforming them into a sound and healthful physical, intellectual and moral condition." M. Lannelongue thus concludes, "I am watching these cases with all possible solicitude and care, and already I am in possession of proofs, that in a large majority of them a distinct amelioration is observable. But as several of the operations are recent, I must limit myself, for the present, to merely mentioning them to my professional friends, and awaiting the time when the results obtained may be fully given for publication." More than three years have elapsed since the first operation was performed by M. Lannelongue, and consequently we shall soon have most interesting details of the surgical treatment of idiocy from an intellectual, moral, and physical point of view. Our illustrious compatriot will very soon find imitators, not only in France, but in different countries, notably England, the United States, etc. We have united in a synoptic tableau the principal indications in all the cases of idiocy treated by craniectomy that we have been able to find in the periodical reports communicated by

authors. Of eighty-three cases of craniectomy illustrated in this tableau, fifteen have died. In many cases, convulsions and partial paralysis have supervened after the operation. With the exception of a few which were carefully observed, the majority of them want the details necessary to form an exact idea of the intellectual, moral and physical condition of the children before the operation. In all, or nearly all, the details are insufficient to permit the establishment of a serious comparison, or to appreciate, scientifically and practically, the value of craniectomy. An amelioration is often proclaimed, but rarely can it be said in what it consists. It may be possible that the operation produces a sort of revulsion, and it may be that everybody, surgeons, internes, nurses, male and female, that are about the children, are interested in them, and hopefully looking to see an improvement.

By practising craniectomy, M. Lannelongue proposes to give a new impetus to the brain by removing or enfeebling the resistance of the cranium. This resistance, according to him, and other surgeons who have resorted to this operation, is caused by the premature ossification of the sutures in microcephalous children, a generic name by which are embraced the different forms of idiocy. The lesions described as hydrocephalus, sclerosis, etc., coincide, says he, with premature synostosis. In an anatomic-pathological classification of idiots, we distinguish the following forms.

1. Idiocy symptomatic of hydrocephalus, or hydrocephalic idiocy.
2. Idiocy symptomatic of microcephalus, or microcephalic idiocy.
3. Idiocy symptomatic of an arrest of development of the convolutions.
4. Idiocy symptomatic of a congenital malformation of the brain, (veritable porencephaly, absence of the corpus callosum) or of a pathological malformation, viz., pseudocysts, pseudo-porencephaly, etc.
5. Idiocy symptomatic of hypertrophic or tubercular sclerosis.
6. Idiocy symptomatic of atrophic sclerosis, sclerosis of the two hemispheres, or of one hemisphere, or of a lobe, or of isolated convolutions.
7. Idiocy symptomatic of meningitis, or of chronic meningo-encephalitis, or meningeal idiocy.
8. Idiocy with pachydermatous cachexy, or myxœdematous idiocy.
9. Idiocy symptomatic of the presence of tumors.

Conclusions.

1. The surgical treatment of idiocy rests upon a hypothesis which is not confirmed by pathological anatomy.
2. Premature synostosis of the sutures of the cranium does not exist in the different forms of idiocy, and it is only exceptionally that a partial synostosis is met with.
3. The lesions to which idiocy is due, are usually profound, extensive, various, and are scarcely susceptible of modification by craniectomy.
4. The diagnosis of synostosis of the sutures, and of thickening of the cranium, is as yet beyond our means of investigation.
5. According to the majority of surgeons, the results obtained by operative intervention are slight, doubtful or null. Grave accidents, such as paralysis, convulsions, etc., and death may supervene.
6. The medico-pedagogic treatment of Seguin, and improved by the introduction of new methods, judiciously applied, and continued for a reasonable time, produce, nearly always an amelioration, and often put idiotic and undeveloped children in a condition to occupy a place in social life.

Biological Society.—M. Luys reported some researches upon the perception of colored magnetic rays by certain individuals while in a state of somnambulism. These subjects, three in number, saw red magnetic rays on the left side, blue on the right, proceeding from the body, and particularly from the eyes of those who were conducting their examination. The middle of the body appeared to them yellow. The ocular currents were very much diminished in those that were tabetic. From the exposed

brain of a living dog, the rays were perceived in the same manner. They disappeared from the cadaver, while feeble rays were emitted from the eyes of tuberculous subjects that had been dead forty eight hours. During the somnambulant condition, there was a considerable dilatation of the vessels at the bottom of the eyes, and it was to this circumstance that M. Luys attributed the visual hyperacuteness that enabled these hypnotic subjects to perceive the magnetic rays that were invisible to others.

M. Pachon presented some experiments upon the digestibility of the pancreas in healthy dogs, and in those from which the spleen had been removed. This organ was taken from young animals. He did not observe any very marked differences in the two series of experiments. The liver showed exhibited no special digestive power.

M. Dastre investigated the pancreatic ferments, viz., the amylolytic, proteolytic, the saponaceous and the emulsive. He decided that the first two might exist independently of each other, according to different periods of digestion.

MM. Charrin and Gley exhibited specimens taken from animals, showing the action of the soluble products of the pyocyanic bacillus upon the heart. The soluble microbic poisons impeded the action of the heart, and finally arrested it in its diastole, the same after the previous destruction of the medulla spinalis. They acted immediately and directly upon it.

Academy of Medicine, Paris. The Morbid Associations of Bright's Disease. M. Laboulière, President—M. Dieulafoy, completing his communication of June 8th upon Bright's disease without albuminuria, stated the morbid associations of Brightism: (1) with gout, (2) with infectious diseases, (3) with syphilis, (4) with chlorosis. The subjects of Bright's disease and gout, he divided into two distinct divisions. Some have albumen for a long time, and in considerable quantity, but they have no other symptom. The urine is of normal condition, and they are not threatened with complications; others, with no albuminuria, experience all the usual accidents of Brightism. In these last, as in the albuminuric gouty, these seemingly slight accidents render the prognosis grave. They foretell uræmia after a short delay, and they impose a rigid hygiene. The infectious maladies, such as pneumonia, and especially scarlatina, are sometimes followed by albuminuria simple, without true Brightism, and sometimes the latter, without albuminuria. Here is the important prognosis of all the accidents of slight uræmia. In syphilis, the same thing occurs; many of the pretended syphilitic brain complications are in reality of an uræmic nature. Chloro-brightism is much more important and serious. It is in the truly chlorotic, with the peculiar tint, puffy swellings, etc., that the ordinary treatment is not effective. These have more brain troubles, dyspnoea, puffiness of the lids, cramps, etc., all indications of Brightism. Some are albuminuric, others are not, but in all, the kidneys are at fault. Uncooked food, quinine, and generous wines are detrimental to them. A strict milk regimen cures them rapidly. But they must be treated and carefully watched, particularly during pregnancy, as then they are specially liable to eclampsia. M. Lancereaux was in perfect accord with M. Dieulafoy as respects Brightism, and uræmia without albuminuria. With regard to the gouty, they are subject to Brightism, when they are, and because they are affected with arterio-sclerosis. The number of slight signs indicated by M. Dieulafoy, particularly the numb fingers, belong simply to arterio-sclerosis. Syphilis itself produces two kinds of lesions. It gives to the secondary period an epithelial nephritis, with nephritic elimination, and analogous to other forms of infectious nephritis. To the third period, it adds limited circumscribed gummata. The first lesions alone conduce to Brightism. In fine, the chloro-brightic are not like the gouty, attacked with Brightism except by reason of their arterial lesions. M. Lancereaux showed that the congenital narrowness of the calibre of the arteries was frequent in the chlorotic, and especially in chlorotic children that were affected with arterio-sclerosis.

M. Dujardin-Beaumetz admitted Brightism without al-

buminuria, and albuminuria without Brightism. He insisted upon the part played by hepatic lesions. The liver, without destroying the hurtful alimentary ingesta, when in a diseased condition, permitted them to pass and reach the kidneys, whose eliminating power was already insufficient. In those affected with Bright's disease, and with a superadded affection of the liver, the necessity for a strict vegetarian regimen is more urgent than ever. All alimentary substances that are rich in toxic elements, such as the mollusca, fish, meats, old cheese, etc., are extremely dangerous.

Typhus at Kasbah, in Algeria.—M. André, of Algeria, on five different occasions, observed cases of typhus in the prison of Kasbah. They manifested themselves in the cells exposed to winds blowing from mounds of filth removed about twenty-five metres away. The mounds received all the filth from the quarter of Kasbah where typhus was endemic. In each of the cases isolation was not done until the fourth day after the diagnosis was assured. But, thanks to careful disinfecting precautions, viz., washing the bodies of the patients with phenated preparations, sterilization of the stools with sublimate, disinfection of the linen, etc., the epidemic was five times prevented from spreading. As regards treatment, M. Treille employed principally coffee, with a little alcohol and milk. He made the patients cleanse the mouth and pharynx frequently with a phenated solution of strength 1-100. They—the mouth and pharynx—are the special places of cultivation of the typhic virus. In 1871 he thinks he himself contracted it by buccal infection, and by carrying between his lips while visiting the patients, the pencil with which he took his notes. He insists upon the rare and special mode of contagion by dust, and also upon the facility with which the extinction of the sources of typhus is effected by disinfection. By reason of his observations, he concludes that typhus is not contagious, at least during the first four days of its existence.

Experiments Upon the Body of a Criminal.—M. Laborde read a report upon a communication from M. Fayel of Caen, relative to experiments upon a criminal. The ocular reflex ceased three minutes, and the rotular reflex, four minutes after decapitation. The beating of the heart persisted for eleven minutes and a half. Absolute inhibition is not then immediate. Twelve minutes after execution, the motor convulsions of the right side were laid bare by trepanning and electrically excited. Movements of the right side of the face were produced. These direct movements can only be explained by diffusion of the current.

Medical Society of the Hospitals. Hereditary Transmission of Rachitis, M. Cornby.—The direct heredity of rachitism is only seeming. The child does not carry within itself the germ of the disease. It is an acquired affection, whose habitual origin is to be found in imperfect nourishment in early life. A great number of facts, carefully collated, have established this conclusion. Artificial milking is very frequent in rachitic families, because the mothers, who are themselves the subjects of the disease, are incapable of affording suitable nourishment. Recourse is then had to aliments that are more or less indigestible. Hence rachitism is seen to perpetuate itself in certain families indirectly and irregularly, by the perpetuation of a vitiated alimentary hygiene. M. Rendu knew a family, of which six children were all affected with a slight degree of rachitism. They were all nourished at the breast by excellent nurses. It is difficult to admit that, in this case, the predisposition was not transmitted hereditarily.

MM. Legendre and Beausse.—The employment of cold baths in the treatment of erysipelas of a grave character, heretofore applied only in tepid form, should be used in all serious cases, no matter from what cause, delirium tremens, pulmonary congestion, broncho-pneumonia, cardiac or renal complications. Antithermic medication gives only insignificant or temporary results. The same with the sulfate of cinchonine treatment of M. Armand, professor of the museum, and experimented with by M. Charrier in pneumonia. In four cases the subcutaneous injections of lactic acid, as a local antiseptic, have

given results sufficiently favorable to encourage new trials.

M. Juhel Renoy agrees with M. Legendre that for severe forms of erysipelas, the cold bath is the best form of treatment. The bath he uses, is that of Brand, at 18°, the patient remaining in it for the space of a quarter of an hour. Sometimes the temperature is elevated to 25° and progressively reduced in successive baths to 18°; sometimes it is given every two hours, and of shorter duration. In 541 patients treated since February, eighty-two presented a typhoid form, eight died, which brought the mortality of this form to 9.75 per cent., while the general mortality did not reach two per cent., if all forms be considered. The results of refrigeration in typhoid forms of erysipelas, are then analogous to those obtained in typhoid fever.

M. Ualude has for five years observed the action of antipyrine on certain forms of atrophy of the optic nerve. This remedy is without effect in those forms of atrophy which are characterized by a primitive alteration of the nerve fibre (the grave atrophy of tabes, or atrophy from direct compression of the chiasma optica.) As regards the atrophy due to an interstitial neuritis—ascending or descending—we may hope that the well-known vaso-dilator action of antipyrine would have a favorable effect upon the connective tissue of the nerve that is threatened with sclerosis. This hypothesis has been verified by facts. In many cases of rebellious optic atrophy that had resisted all treatment visual acuteness has been ameliorated by the prolonged antipyrine treatment. The vision of small objects near at hand, is more notably augmented than at a distance. This indicates that the remedy influences only a portion of the nerve fibrillae, the others being too much degenerated and not able to react favorably to the vascular excitation produced by the antipyrine. This should be administered in the form of subcutaneous injections of from 1 to 2 gr. every second day and continued for some time.

Surgical Society, Paris. M. Périer, President: M. Reynier returned to the question of urinary antisepsis. He gives the preference to salol.

The operation for appendicitis. M. Réclus resected the appendix in a man of 32 years. He had had two previous attacks of appendicitis without fever or any peritoneal phenomena. The third attack passed in the same way, presenting only an increase of painful symptoms, especially in the lower extremities.

M. Réclus insisted upon several points. (1) The little value of medical treatment. (2) The absence of fever in similar cases in which collections of pus had taken place in the iliac fossa. (3) The frequency of peri-appendicular suppuration, without perforation of the appendix. These are perhaps cases of tubercular appendicitis, like those described by M. Cornil. M. Nelaton has always observed very acute and intense phenomena in the cases he has treated. His patients had rarely had previous appendicular colic. M. Lucas-Championnière accords great value to medical treatment, which often cures, and M. Verneuil was of the same opinion.

M. Rontier reported several cases of acute appendicitis, that simulated intestinal obstruction and indigestion. Two of his patients, that he had operated upon, and who had had no previous attacks, succumbed to the general peritonitis which existed before the operation.

Resection of the Saphena. M. Isch-Wall resected nearly the whole length of the saphena in many cases of phlebitis of the lower extremity.

Fistula of Ureter, Pyonephrose Hysterectomy. M. Pecqué related the case of a woman upon whom he had practiced nephrectomy for pyonephrosis consecutive upon an ureteral fistula following hysterectomy.

Anthropological Society, Paris. M. Salmon, President: MM. Manounier and A. de Mortillet presented a documentary report upon the prehistoric collections of Dr. Prunières, to which they have added information upon the general prehistoric conditions of the department of Lozère. It was in this department especially that the collections were made. They represent the fruit of the study of twenty years, and have for their special object the

dolmens or Breton cromlech, containing human remains.

The department of Lozère is very meagre in palæolithic specimens, but the neolithic period is, on the contrary, well represented by polished stone hatchets with stag-horn handles, sheaths on the horns, vases, platters in polished stone, osseous pearls, marine shells, calcarea, schist, etc. The collections embrace also objects in bronze.

M. Sylvester presented instruments belonging to the savage or semi-civilized tribes of Indo-China. He found ethnographic indications of the people of Moïs Muangs, Chaos, etc., who inhabited the country situated between the Mekong and the rivers of Tonkin. In Tonkin were found instruments of copper and of bronze, the latter much more interesting than the former, and even now indeed very rare in these countries. On the other hand, silex is very abundant. There are certain instruments now in use that recall ancient forms and made from the iron of Cambodge, the original of the country in which this mineral is of a richness of seventy per cent.

M. Arsene Dumont continued his very important and interesting observations upon "Demographie en France." History of certain of the people of France. As respects five sections of the commune of Oléron, he found a very large proportion of the population having black hair and eyes dark colored, with always the general appearance of a blond race. During an epidemic of bloody sweat which broke out among the population, the mortality reached a high degree in four sections of the commune, while the fifth escaped. In this section, the population was different in an anthropological point of view, and presented all the characteristics of the Celtic race. M. Dumont concludes that in the classification and consideration of anthropological characteristics, it is necessary to take into account, not only the color of the hair and the eyes, but also the form of the body.

M. A. de Mortillet gave a lecture from a note of M. Emille Schmidt, upon the funeral grotto discovered at Liny, between Reims and Chalons, in which were found a number of skeletons.

Society of Practical Medicine and Surgery. President, M. de Beauvais. Formulary of active drugs. M. Barde. The medical practice of the future is certainly that which will utilize the active principles of plants, alkaloids, and glucosides. But there are many causes to-day, which will prevent the practitioner from availing himself of these products. They are: (1) The great number of similar compounds that encumber the formulæ. (2) The incoherence of the prescriptions of the codex on the subject of the alkaloids which must be delivered by the druggist. All the alkaloids of plants have been tried, but in reality, only a few are useful; the others represent isomeric or indefinite bodies, which are useless if they possess identical properties, and dangerous if they are not pure, for they suggest erroneous ideas that are capable of producing trouble. The best plan then is to retain in therapeutics only a small number of well-known substances, from a chemical point of view, easily obtained pure, and well understood clinically. The admission into the codex of amorphous bodies is very dangerous. In effect, Adrian has demonstrated that all crystallized alkaloids possess, in plants, isomeric elements that are uncrystallizable. These derivatives are amorphous, but they are as active as the crystallized bodies, from which they do not differ except in molecular construction. The idea of amorphous alkaloids implies a danger, for in the opinion of the framers of the codex, amorphous products are less active than crystallized bodies. On the other hand, under the name amorphous, commerce furnishes very unreliable products, and very variable in their activity. It is necessary then that the codex and physicians should renounce the employment of amorphous principles and only accept well-defined crystallized products. The codex should exact the physiological properties of the active medicaments. By this plan alone perfectly applicable, can a guarantee be given the sure delivery of the alkaloids. If these different measures are not adopted, there will always be a fear of acci-

dents occurring very often, due to the incompleteness of the regulations controlling the pharmacopeia upon the subject of these dangerous products.

The Duration of the Incubation and Contagiousness of Infectious Diseases.

The following are the conclusions of a long report which has been communicated to the "Clinical Society of London."

Diphtheria.—The incubation is of four days' duration, it is exceptional when it passes the seventh day. Contagion is effective at all periods of the disease, and a long time after the cure. It is not possible to fix a date for this.

Typhoid Fever.—Incubation, from twelve to fourteen days. It is only from eight to nine days in certain cases, and exceptionally twenty-four days in others. Contagion during the whole duration of the disease, and for fifteen days after the cure.

Influenza.—Incubation from three to four days. Contagion may exist ten days after the beginning of the malady.

Rongeo.—Incubation, fourteen days. Contagion operates, not only during the period of invasion, but after convalescence.

Mumps.—Incubation, two or three weeks. Very contagious during the three or four first days, much less afterwards.

Rubeola.—Incubation very variable; appears to be about eighteen days. Contagion effective during the three or four days preceding the eruption, and during its evolution, but the contagion disappears quickly.

Scarlatina.—Incubation varies from twenty-four to seventy-two hours. Contagion existing after the cure.

Varicella.—Incubation, twelve days, contagion possible during the first period, especially at the period of suppuration, and until complete desiccation of the pustules.

Varicella.—Incubation fourteen days, may go to twenty. Contagion during the eruption.

Disinfection of the Hands in Obstetrics.—Professor Tarnier insists upon the disinfection of the hands in the practice of obstetrics. He says disinfection of the hands is so important in obstetrics, that I cannot do better than make it the subject with which to recommence my clinical lectures. Every day we practice asepsis of the hands, and you should know why it is done with the greatest care. It is admitted indisputable to-day that in order that a lying-in woman may be in a healthy condition, that her genital organs should be free from every pathogenic microbe and that the hands of the person who has charge of her delivery, should be perfectly aseptic. If this double condition is not fulfilled, the finger will perhaps carry hurtful germs to the depths of the organs. The vaginal touch practiced without antiseptic care, is dangerous. Certain authors have indeed gone so far as to say, that it would be better not to touch women in labor at all. But this I do not approve, for the touch alone gives indispensable information of the progress of dilatation and the appearance of accidents, sometimes preventable, such as proclivities of the cord, etc. In my opinion, without the touch, obstetrics would disappear. But it is necessary to practice it with the most complete aseptic precautions, and which students of medicine should thoroughly learn. After having shown at length the accidents which might be produced by septic hands, M. Tarnier concluded as follows: These are the rules which you should invariably follow: (1) Soaping and brushing the hands under a stream of water containing 40 c. g. of sublimate to 1000 gr. (2) Washing the hands until all the soap is removed. (3) Cleaning the nails. (4) Washing in alcohol. (5) Rinsing in a solution of sublimate. (6) Immersion in permanganate of potash. But you might ask how to get rid of the brown color produced by the permanganate of potash. Nothing is more simple. It suffices to dip the hands in a solution of bisulfite of soda 1-10, and you will have the satisfaction of having had your hands perfectly aseptic during your visit, and of seeing them, on leaving the hospital, whiter than before you entered it.

J. A. C.

On Some Recent Uses of Phenacetine.—Professor Mays, in a late address before the Philadelphia Polyclinic referred to the value of phenacetine in the treatment of asthma. He gave it in combination with quinine.

Dr. Mays said that the medicines should be given in the evening, since asthma is nocturnal in its attacks, and the patients should be protected at night. Dr. Hunter Robb calls attention to the value of phenacetine as a substitute for morphine in painful cases in gynecological practice. He says (*Maryland Med. Jour.*, May 1.) "as substitutes for morphine, I would advise, wherever practicable, electricity; in guarded doses, gelsemium, phenacetine; and as local applications the cautery, oil of peppermint and oil of wintergreen."

Dr. D. Coit Taylor (*Med. World*, July, 1893.) recommended the external use of phenacetine for rheumatism. He writes: "Rheumatic pain of joints, pain from sprains, contusions or bruises;

B Phenacetine..... gr. 15 to 20

Spts. Vini Rect.....

Aque Bul..... aa 1 oz.

to be applied on cloths as hot as it can be borne; or

B Phenacetine..... gr. 15 to 20

Lanoline..... 1 drachm

Make into an ointment and apply by manipulation.

Apply these when indicated and the results will be satisfactory." As a dry application to ulcerated surfaces, the value of phenacetine is now widely understood.

Decline of Stature.—A French statistician, who has been studying the military and other records, has found that in 1610 the average height of man in Europe was 5 feet, 9 inches; in 1820, it was 5 feet 5 inches and a fraction. At the present time it is 5 feet 3½ inches. It is easy to deduce from these figures a rate of regular and gradual decline in human nature, the calculations show that by the year 4,000 A. D., the stature of the average man will be reduced to 15 inches.

The Tobacco Habit in Heart Disease.—In a recent clinical lecture, while discussing the question of prognosis in chronic valvular disease of the heart, Dr. A. A. Smith, Professor of Practice in the Bellevue Hospital Medical College, made some statements in regard to the effects of the tobacco habit in heart disease, which varied considerably from the teachings of most authors on this point. While admitting the evil of the use of tobacco to a certain extent, he said that it was not always wise to make a patient with any chronic disease, particularly cardiac disease, stop the tobacco habit. "The effects on the nervous system of a sudden change from a habit that has been long continued is often more deleterious to the patient than would be the continuance of the habit. There are many cases of heart disease met with in private practice, in patients who are habitual smokers, in which it is noticed that palpitation, dyspnoea, and precordial distress are excited upon the slightest exertion when the use of tobacco has been shut off, while during the continuance of the habit compensation was well kept, and the patient experienced no particularly ill effects from his valvular lesion.

Dr. Smith referred to a young physician whom he knew ten years ago, who had grave valvular lesions and in whose case the prognosis as to time was but a few years; the young man thought he would take all the comfort he could while he lived, so began a rather immoderate use of tobacco; he is living yet and his prospects are more brilliant than they were ten years ago. Another case was mentioned of a cigar-maker who was told that he must cease the use of tobacco, as he had a double valvular lesion; the man stopped the habit altogether for two weeks, during which time he suffered so from dyspnoea and palpitation that he began the habit again with a relief of these symptoms. Dr. Smith said that he now has under observation two Russian ladies who contracted the cigarette habit in their native country; both have organic heart disease; as long as they continue the cigarette habit they ex-

perience no severe results from their heart disease, but, as soon as they attempt to break away from the habit symptoms of loss of compensation and of beginning predominant dilatation are observed. The professor did not wish to convey the idea that the cases mentioned above were typical ones, or that the use of tobacco was justifiable in all cases of heart disease, or even in the majority of them, but simply wished to show that tobacco was not contra-indicated in all cases, as well as that a bad prognosis is not to be made in a patient with valvular lesions on the ground that he is addicted to the use of tobacco.

Use of Aescorcin in Ophthalmology.—According to Froelich (*Med.-Chir. Rundsch.*, 1892, 828) aescorcin—a split-product from the shell of the horse-chestnut—can be advantageously employed in the diagnosis of corneal affections. If one drop of a 10-20 per cent. solution of aescorcin is applied to the unwounded cornea, and the part afterwards examined with a magnifying glass, (preferably under artificial light) the lachrymal secretion covering the cornea will appear of a reddish color. After waiting a few moments, or washing away the secretion with a little water, the cornea will again become quite colorless. If, however, the cornea be not intact, if there be any solutions of continuity in its epithelial investment, these latter will be colored bright red by weak, dark red by strong aescorcin solutions. Such coloration will disappear in from ten to twenty minutes, according to the extent and character of the lesions.

OBITUARY.

THE death of Dr. I. Kafka, of Prague, removes one of the most scientific laborers in Homœopathic practice on the continent of Europe. Dr. Kafka is succeeded by his son, now a resident of Carlsbad.

DR. JOHN KING, one of the oldest and ablest physicians and writers in the Eclectic school, died June 12th, in the 81st year of his age. His life record was one of usefulness and earnest devotion to his profession, and he leaves a name which will long live in the records of his profession.

THE death of Dr. Charcot, at the age of 68, removes from the ranks of the profession one of the ablest and most scientific workers in the specialty of diseases of the nervous system. Prof. Charcot devoted much time to the study of hypnotism and its phenomena, and his experiments upon the subject, in the hospital of La Salpêtrerie in Paris, have been the principal source of what knowledge is possessed of hypnotic phenomena at present. Dr. Charcot has written several important works on nervous diseases, and his scientific modes of investigation and his great ability in his specialty gave great weight to his opinion upon every subject related to the nervous system he discussed.

DR. HENRY B. MILLARD, of No. 4 East 41st Street, died in Paris, September 14th, of typhoid fever. Dr. Millard was a graduate of Hamilton College, of the class of 1855, and in medicine of the University Medical College. He was a student in medicine of Dr. John F. Gray, and during the early part of his professional life was identified with the Homœopathic School of Medicine, but later, wishing for a larger and more liberal sphere of action where he could still maintain an independence of thought and action, he became a member (believing he would have more liberty) of the New York County Medical Society and the Academy of Medicine. At different times, on account of his high standing as a scholar and his originality in medical research, Dr. Millard was elected an honorary member of the Societe Anatomique of Paris, Foreign Corresponding Member of the Verien Deutscher Artze of Prague, of the Societe de Hydrologie Medicale of Paris, and of the Royal Academy of Medicine in Rome. In addition to several original and translated articles from the German and French, Dr. Millard wrote a work on *Morbus Brightii*, which is recognized as a standard authority.

MISCELLANY.

—Bicycle riding has proved curative in several cases of persistent sciatica.

—Dr. Senn maintains that catgut is an efficient suture for a fractured patella.

—The State appropriation for the care of the insane this year amounts to nearly \$3,000,000.

—An urgent call was left for a physician to come at once and bring his urethra-measuring catheter.

—Charcot says: "Every drop of seminal fluid of a drunkard contains the germs of all the neuropathies."

—The Board of Health, during the past year, destroyed 4,000,000 pounds of bad meat, fish, fruit and vegetables.

—The Turkish Government prohibits the importation and sale of secret patent medicines within its dominions.

—A laboratory is to be erected in Calcutta, for the purpose of studying the various snake poisons and their antidote.

—The *College and Clinical Record* states that Colorado and New Mexico have the best climates for asthmatic patients.

—A New Hampshire man was recently granted a divorce from his wife on the ground that she was a Christian Scientist.

—*Med. Fortnightly* asks: Might not a case of consumption contracted in a sleeping car, be properly termed, phthisis pulmanalis?

—Lawson Tait says: "Exact abdominal diagnosis is an impossibility, and he who asserts to the contrary is either rash or inexperienced."

—Restaurant coffee, according to a Paris journal, is a mixture made of horse liver roasted in the oven, black walnut sawdust and caramel.

—A Scotch judge classes liars under three heads: First, positive, liars; second, comparative, d—liars, and third, superlative, expert witnesses.

—Prof. Parvin gives the following as the three most common causes of abortion, viz.: syphilis, displacements, and excessive sexual intercourse.

—We are glad to see that Prof. H. F. Bigger, of Cleveland, has received the well deserved honor of the degree of LL. D. from his Canadian *Alma Mater*.

—Tincture of oil of cinnamon is said to be a specific for post-partum hemorrhage. Give from twenty to sixty drops as often as necessary to control the hemorrhage.

—At the last government examination in Japan for license to practice medicine and surgery, four thousand two hundred and seventy candidates presented themselves.

—"I will come on first train," said a physician through the telegraph, "but in the mean time let her have apis." The young lady operator blushed and never spoke to him again.

—It is said to be now illegal in France for any person to give children under one year of age any solid food except on medical advice, and nurses are forbidden to use nursing bottles having rubber tubes.

—If the intermarriage of disease was considered in the same light as the intermarriage of poverty, the hereditary transmission of disease, the basis of so much misery in the world, would soon be at an end.

—The Cartwright prize of five hundred dollars established by the Alumni of the College of Physicians and Surgeons, has been awarded to Dr. W. A. Holden, of this city, for an essay entitled, "An Outline of the Embryology of the Eye."

—Dr. Annie Falton Reynolds, of Boston, who read a paper before the Dental Congress in Chicago, was the first woman to be graduated from a New England dental college. She was one of two women to speak before the Dental Congress.

—The suicide mania has become so great in Denmark, that the government is considering measures to check it. One likely to be adopted is the Swedish law which compels the body of every person who commits suicide to be sent to the dissecting room of the nearest university.

—"I don't want any castor-oil," said a sick Boston boy, petulantly, "and I won't take it."
"Why, Horace, expostulated the mother, "don't you know that castor oil is made from beans?"

And the little boy whose faith in his mother is perfect, took the dose, and feebly asked for more.

—Dr. Tully, of California, suggests that "cerebrine" would be vastly improved if the brains of the horse, owing to his proverbial intelligence, otherwise known as horse sense, were substituted for the crude material taken from the ox. The *Medical Age* thinks this suggestion worthy of deep consideration, and respectfully lays it before the distinguished inventor of animal extracts.

—Of the press of England, Mr. Ernest Hart (*Brit. Med. Jour.*), says it is eminently, wholly, and sadly unscientific. With but few exceptions, it is ignorant of and generally adverse to biological science; it follows readily in the train of the worst charlatans and impostors in medical science. Of the press of Europe, that of Great Britain alone is openly charged with the habitual sale of its advertising columns to the quack, the charlatan and the impostor.

—From the multitude of advertisements calling attention to the great value of various purging nostrums one would infer that we Americans as a nation must be very subject to constipation, or that like the North American Indian, we are in danger of perishing from consumption by excessive purgation, as is actually the case with some tribes. Regular habits, suitable food, and rational treatment, make the dreadful cathartic doses formerly so common an antique relic of heroic dosings.

—A writer on science claims to have found considerable color-blindness among our native Americans, the so-called Indians. This we believe must be an exaggerated statement. Among no people is the love for and appreciation of color more noticeable. The wonderful skill in the manufacture of articles of bead work, and the artistic harmonizing of colors contradicts any notion of color blindness as an Indian defect. Those whose experience covers many years among many different tribes of red men flatly contradict this.

—The item which is going the rounds quoting Dr. Lawson Tait as saying, "I pay not the slightest regard to sterilization of any kind; the whole of such precautions are farcial," reminds one of the reputed saying of Mark Twain, "I believe so thoroughly in total abstinence that I totally abstain from total abstinence itself." One of our leading operators in Chicago used to make fun of the antiseptic precautions of his confrère, but was in his own person as well as in his care of his instruments absolutely clean. After all, what is sterilization but scientific cleanliness? He who is clean in person, clothing and instruments has given his patient a good chance for recovery. "A rose by any other name would smell just as sweet." Progressive surgery will continue to exercise due care and he who knows how to do the best will reap the reward. Medicine has her Renans and Voltaires quite as much as religion, for both go on winning new laurels and increasing the armament of defence against the sneers of poticism.